

SOCIAL SCIENCES

- Social Development of Soviet Society
- Contemporary Science and Humanism
- Psychological Compatibility in Space
- The Elementary Particle and the Universe
- The Aesthetic Conception of Man in the Literatures of the Soviet East
- Ethnographic Studies in the USSR
- On the Origins of the Chinese
- The Scientific and Technological Revolution and the Third World

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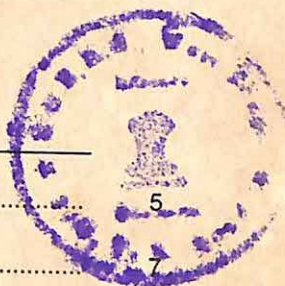
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To the Reader

As our mailbag shows, questions related to the social development of Soviet society continue to evoke lively interest in all parts of the world. We therefore open the issue with an article by S. Khromov dealing with these questions.

International meetings of scientists is one of the regular forms of scientific cooperation. The current year will see several international congresses in the field of the social sciences: in September philosophers will meet in Varna, in July orientalists will get together in Paris, in September Chicago will act host to anthropologists and ethnographers. Forums of this kind give scientists the opportunity to compare concepts and opinions, to exchange views on major issues, to acquaint themselves with each other's methods of work, help to focus attention on the problems of the day.

The present issue contains a selection of articles by Soviet scholars on problems connected in one way or another with the international congresses. These include the leading article "Man-Science-Technology", the item on the agenda at Varna, the articles by I. Frolov, "Contemporary Science and Humanism" and by V. Podmar-kov "Man in the World of Professions". In the section "Views and Opinions" the reader will find a review of the discussion organised by the journal *Voprosy literatury* (Problems of Literature) on the role and place of man in the scientific and technological revolution (in connection with the staging of the play by I. Dvoretzky *Calling in an Outsider*, which has aroused wide response among the Soviet public).

The scientific and technological revolution, which is affecting the material basis of the present historical process at a pace hitherto unknown, is coming into conflict with society and man. The far-reaching, and not always foreseen, consequences of this interaction are today everywhere the subject of a close study. It is not accidental that the works of many Western scholars centre on the negative consequences of scientific and technological progress: after all, how this progress affects the life of man and society depends on the social conditions in which its achievements are applied and used. It therefore follows that the consequences of the scientific and technological revolution which do not benefit man and society can be removed only by changing the social conditions in which its achievements are used (this does not apply to certain results of scientific and technological advance which can be changed through further improvement of the techno-scientific processes themselves).

In their analysis of the contradictory character of the development of relations between science and technology, on the one hand, and man and society, on the other, Marxist scholars base themselves on the humanistic trend of this development in socialist society. Social scientists in the USSR and in other socialist countries are concerned with questions of the positive interaction of man and technology, with studying the most effective ways and methods of fusing the achievements of the scientific and technological revolution with the advantages of the socialist economic system in the interests of society and man.

The articles by Soviet orientalists in this issue treat of the aesthetic conception of man in the literatures of the Soviet peoples of the East (Z. Osmanova), or the common and the specific in the Central Asian epic (S. Neklyudov), of socio-economic aspects of the Third World countries in the light of the present scientific and technological revolution (A. Elyanov). Academician B. Gafurov writes about the research by the Institute of Oriental Studies, which he heads, into the history and culture of the Soviet East. In the "Critical Studies and Comment" section V. Pavlov and R. Ulyanovsky review G. Myrdal's book *Asian Drama*, published in Russian in the USSR in 1972.

In connection with the international congress of anthropologists and ethnographers in Chicago Y. Bromley familiarises the reader with ethnographic studies in the USSR. The article by A. Reshetov and N. Cheboksarov "Anthropology and Ethnography on the Origins of the Chinese" concludes the selection of materials on the scheduled congresses.

As usual much space is devoted in the issue to book reviews, scientific life and bibliography.

The Editors

Some Aspects of the Social Development of Soviet Society

The present stage in the development of socialist society in the USSR is characterised by accelerated growth in the economic, social, political and spiritual potential and by improvement in the entire system of social relations. The developed socialist society which Lenin spoke of in 1918 as the future of our country was, as Brezhnev pointed out in his Report to the 24th CPSU Congress, "built by the selfless labour of the Soviet people".¹ It is marked by a high degree of economic development, a maturity in social and political relations and overall cultural progress.

The building of a new society is a many-sided process which involves radical changes in all aspects of social life. If we take the social and political problems examined by the 24th CPSU Congress, it must be said that the following questions were given a new concrete content: the concept of developed socialist society; the social structure of Soviet society and tendencies in its development; the gradual eradication of the basic distinctions between town and country, and between mental and manual labour; the further strengthening of the social, political and ideological unity of Soviet society; the new stage of relations between nationalities in the USSR, and, above all, the rise of a new historical community of people—the Soviet people; the present state of the political organisation of Soviet society, including the ways of strengthening the Soviet state and developing socialist democracy still further; the moulding of the new man, of the communist world outlook among the broadest masses; the importance of school education, science, literature and art and the mass media in society's material and spiritual life; the enhanced role of the CPSU in communist construction.

This article is an attempt to analyse the social development of Soviet society and its social structure under conditions of the developed phase of socialism.

DEVELOPED SOCIALIST SOCIETY

Lenin first introduced the concept of a "developed socialist society" into the theory of scientific communism, when he analysed the prospects of socialist construction in Russia.²

¹ *24th Congress of the CPSU, 1971*, Moscow, 1971, pp. 47-48.

² See V. I. Lenin, *Collected Works*, Moscow, Vol. 36, p. 139; Vol. 40, p. 104 (in Russian).

Socialism had already triumphed in the USSR in the second half of the 1930s. The 18th Congress of the Communist Party of the Soviet Union (Bolsheviks) noted that the first phase of communist society, socialism, had already been achieved in our country, in the main. The same Congress defined the content of the new period in the development of Soviet society as one of completing the building of socialism and making the gradual transition to communism.

The formula, "the building of socialism in the main" signified that the new social system had won in the decisive areas of the economy, culture and social relations. Capitalist ownership of the means of production was abolished, the leading role of socialist industry in the entire economy was ensured and the socialist remodelling of agriculture was more or less completed. Fundamental changes occurred in the social and class composition of society. The exploiting classes and possibilities for the exploitation of man by man had finally been abolished. The working class grew in numbers and in quality, and its leading position in society was consolidated. The peasants also changed. They united in collective farms and engaged in collective, socialist agriculture on the basis of collective farm-cooperative property. Considerable achievements were registered in developing a socialist intelligentsia who came from among the people and served its interests. Social culture now belonged to all the people. Marxism-Leninism became the dominant ideology of society, and socialism thus triumphed in the sphere of production and in the political superstructure.

But the society which took shape in the USSR before the Great Patriotic War of 1941-1945 was not yet a society of developed, mature socialism. Although in all these areas the main stride forward had been taken by the end of the 1930s, the major social and economic indices were not yet up to the Marxist-Leninist concept of developed socialism. The common factor for socialism, built in the main by the late 1930s, and present-day developed socialism is that they are based on the same type of production relations, and the same economic laws—the laws of the socialist formation. Both these stages in the first phase of communism are characterised by a common ideology, by unity of the class structure.

As for the differences, they are found mainly in the scale of economic development, the degree of maturity of social relations, the level of the material well-being, education, vocational training and consciousness of the working people, the scope of science and culture, and so on. The degree of development of the social structure of society is also an important factor. The major changes which have taken place in Soviet society since the end of the 1930s have together determined the transition to developed socialism. For a start, the volume of industrial output increased tremendously. In 1937 the Soviet Union produced 17.7 million tons of steel—four times more than before the revolution. But that figure was only a seventh of the

³ See *CPSU in Resolutions and Decisions of Congresses, Conferences and Plenary meetings of the Central Committee*, 8th Edition, Vol. 5, Moscow, 1971, p. 335 (in Russian).

present level. Oil output amounted to 28.5 million tons (almost three times more than in 1913, but less than one-fourteenth of the 1970 figure). The power industry generated 36,200 million kilowatt-hours (18 times above the prerevolutionary level, but almost 24 times less than the figure reached in 1972). At present a day's social product created in the USSR is valued at almost 2,000 million rubles, ten times more than at the end of the 1930s. The value of industrial output in 1970 alone was about twice the total production during all the prewar five-year plans combined.⁴

Great progress has also been made in agriculture. More than six times as many tractors are working in the collective-farm fields than before the war, the area under the plough has been expanded. The harvests have increased thus ensuring an increase in state purchases of agricultural produce. Substantial changes have also taken place in the size of the collective farms. In 1940 the average collective farm included 81 peasant households, and in 1971, 440. The average area under crops per collective farm was 500 hectares in 1940 and 3,000 hectares in 1971, and the number of tractors (in terms of 15 hp units) was 2.4 and 62 respectively.⁵

A sufficiently high level of well-being has been ensured for all the working people and a ramified system of public services has been built up in the developed socialist society. In 1971 the average monthly wage was almost four times as high as in 1940, while other payments and benefits were more than 10 times as high (per capita). State outlays on pensions grew almost 50 times. The wiping out of illiteracy and semi-literacy was a cardinal gain of the Soviet system at the end of the 1930s. In 1939 the rate of literacy among the population, between the ages of 9 and 49, was 87.4 per cent. The level of education is one of the determining factors of the degree of a society's development and an important prerequisite for achieving social homogeneity. In 1970 more than 65 per cent of the people engaged in economic activity had a higher or secondary education (including incomplete), as against 12.3 per cent in 1939.⁶

All these and other comparative data show how right the statement in the Report of the CPSU Central Committee to the 24th Party Congress was: "An immeasurably higher level has been achieved in the national economy, in socialist social relations, the culture and the consciousness of the broad masses."⁷

Thus, developed socialist society in the USSR is the highest stage in the first phase of communism. This stage is characterised by:

⁴ *The USSR in Figures in 1972*. Brief Statistical Handbook, Moscow, 1973, pp. 76-77 (in Russian); *24th Congress of the CPSU*, 1971, p. 48.

⁵ See *The USSR and Foreign Countries After the Victory of the Great October Socialist Revolution*, Statistical Handbook, Moscow, 1970, p. 83 (in Russian); *The National Economy of the USSR in 1970*, Moscow, 1971, pp. 384, 386 (in Russian); *The USSR in Figures in 1971*, Brief Statistical Handbook, Moscow, 1972, pp. 142-143 (in Russian).

⁶ See *The USSR and Foreign Countries...*, pp. 174, 207. Education, Science and Culture in the USSR, Statistical Handbook, Moscow, 1971, p. 23 (in Russian).

⁷ *24th Congress of the CPSU*, 1971, p. 47.

a powerful material and technical basis which relies on the achievements of the contemporary scientific and technological revolution;

free scope for the operation of all the economic laws of socialism;
a harmonious, balanced development of all sectors of the national economy;

a high degree of maturity in the development of social relations based on the complete domination of socialist property, on friendship and cooperation between classes and social groups, nations and nationalities, and the formation of a new historical community of people—the Soviet people;

a new stage in the development of the political organisation of society, the gradual growth from a proletarian dictatorship into a state of the whole people, and the further of socialist democracy;

a sufficiently high level of material welfare for all the working people, the wide development of the social maintenance system both in town and country;

a high level in the advance of science, culture, education and the skill of the working people;

Marxism-Leninism as the ideology of the entire people;

further enhancement of the leading role of the Communist Party and the consolidation of its unity with the masses.

The advantages of socialism are fully revealed at this stage. The developed form of socialism contains all the prerequisites for its successful growing into a communist society.

The establishment of developed socialism represents a long historical phase in the course of which its characteristic attributes and features mature and can be seen.

Developed socialism began to emerge towards the end of the 1930s when the USSR entered the stage of completing socialist construction. We see the successive stages in the establishment of developed socialist society in the USSR as follows: the complete and final victory of socialism, achieved by the end of the 1950s and recorded in the decisions of the 21st (Extraordinary) Congress of the CPSU (1959); the period of full-scale communist construction and the adoption of the Party Programme by the 22nd CPSU Congress (1961). A thorough analysis of the development of the Soviet state over half a century enabled Leonid Brezhnev, the General Secretary of the CPSU Central Committee, to draw the conclusion in 1967 that a developed socialist society had been built in our country.⁸ This conclusion has been confirmed in the documents of the 24th Congress of the CPSU.

At present the USSR is continuing to further develop socialist society, and this process by its social and economic content and objectives signifies the full-scale building of communism.

CHANGES IN THE SOCIAL STRUCTURE OF THE USSR

Under developed socialism social factors play an appreciably greater role, ever greater attention is paid to further improvement of the

⁸ See L. I. Brezhnev, *Following Lenin's Course*, Moscow, 1972, pp. 24, 32.

social structure of society. "The Party's policy yields the required results only when it fully takes into account both the interests of the entire people and the interests of various classes and social groups, and directs them into a single common channel,"⁹ it was pointed out in the Report of the Central Committee to the 24th CPSU Congress.

The Congress noted important shifts in the social structure of Soviet society. What is the nature of these shifts? What changes has the social structure of society undergone? The main thing to which attention was paid was that all the classes and social groups are being drawn together and the social unity of Soviet society is being consolidated on the basis of socialism's inherent dynamic economic growth, and the intensified process of obliterating the basic distinctions between town and country, and between manual and mental labour.

This is a serious gain for the Communist Party and an important stage on the way to a classless society and the attainment of social homogeneity. L. I. Brezhnev referred to the activity of the CPSU in this sphere as one of the principal sectors in building communist society. The drawing together of classes and social groups and the consolidation of Soviet society's unity have proceeded on the basis of the Marxist-Leninist ideology which expresses the socialist interests and the communist ideals of the working class.

The changes in the social class structure of the USSR reflect the basic economic changes in the Soviet Union during the years of socialist construction; they are a result of implementing the policy of the country's industrialisation and collectivisation of agriculture. They take place under the impact of the scientific and technological revolution, the swift development of the productive forces and the rise in the proportion of mechanised labour. All this has made for a substantial change in the balance between the urban and rural population. While in 1913 only 18 per cent of the population lived in towns and urban settlements, the percentage was 33 in 1940 and in 1973 over half the population (59 per cent) lives in towns.¹⁰

Basic changes have also taken place in the pattern of employment. (See Table 1.)

Table 1

Distribution of the Population Engaged in the National Economy by Sectors
(Without Students), per cent *

	1940	1960	1965	1970
Total	100	100	100	100
Industry and construction	23	32	35	37
Agriculture and forestry (including personal subsidiary farming)	54	39	32	27
Transport and communications	5	7	8	8
Trade, catering, material and technical supply, sales and procurements	5	6	6	7
Health, physical culture and social services; education, culture and art; science and scientific services	6	11	14	15
Other spheres	7	5	5	6

* *The National Economy of the USSR in 1970*, p. 507 (in Russian).

⁹ 24th Congress of the CPSU, 1971, p. 87.

¹⁰ *The USSR in Figures in 1972*, p. 7 (in Russian).

The downward trend in the percentage of people employed in agriculture is striking. Even in 1960, not to mention the prewar period, many more people worked in agriculture than in industry and the building trades. Ten years later, in 1970, the percentage of people employed in the latter sectors was 10 per cent higher than in agriculture and forestry (including personal subsidiary farming).

Alongside the redistribution of the population among the material production sectors, which was especially characteristic of the transition period, the growth in the number of people engaged in the non-productive sphere has been a progressive tendency in recent years. In 1940 they amounted to 11.7 per cent of all people engaged in the national economy; in 1965, 20.1 per cent and in 1970, 22.6 per cent.¹¹ Such a change in proportions is the result of the increase in the number of doctors, teachers, cultural and especially scientific workers and, recently, of a substantial development of the service sphere.

All these population movements stem from the social class shifts which directly shape the social system (see Table 2). During the building of socialism, changes in the socio-class structure of Soviet society acted as a process of eliminating the class antitheses by abolishing the exploiting classes. The general tendency is an increase in the proportion of people engaged at state enterprises, enterprises which are the property of all the people, a growth in the ranks of the working class and the intelligentsia.

Table 2

Class Composition of the Population
(per cent)*

	1913	1939	1959	1972
Entire population (including non-working members of families),	100	100	100	100
including:				
Factory workers and office employees	17.0	50.2	68.3	80.7
of which:				
Workers	14.0	33.5	49.5	59.8
Collective farmers and artisans united in co-operatives	—	47.2	31.4	19.3
Individual peasants and artisans	66.7	2.6	0.3	—
Bourgeoisie, landowners, merchants and kulaks	16.3	—	—	—

* *The National Economy of the USSR. 1922-1972*, Statistical Yearbook, Moscow, 1972, p. 35 (in Russian).

Socialist classes represent a differentiated social community where the class features act as the general, while the specific features of its groups act as the particular in the dialectics of the development of a class. Heterogeneity of labour is the material basis for the intra-class structure in developed socialist society. At present, social consolidation is effected not so much through quantitative changes in the social class structure, as through the qualitative development of the working class, collective farmers and the intelligentsia.

A major proposition of the 24th CPSU Congress is the conclusion that during communist construction the leading role of the working class is not only preserved but is further enhanced. The economic,

¹¹ *The National Economy of the USSR in 1970*, p. 508.

social and political aspects of the present stage in the development of Soviet society bear out the Leninist thesis that the working class is "the intellectual and moral force and the physical executor"¹² of a historical task—the building of communism.

The leading position of the working class in socialist society is not some kind of artificially created privilege, but a result of the operation of the objective laws of social development. The historical development of the USSR, of other socialist countries and the entire world conclusively refute the allegations of revisionists of the Garaudy and Fischer brand that in present-day conditions the working class is vanishing and losing its former role in the life of society.

The working class acts as the principal force in building the material and technical basis of communist society. It is directly linked with the leading sector of social production—large-scale machine industry which is the decisive sphere of production. Its labour is based on enterprises which are the property of all the people, of the state. By their labour the workers build and develop at a high pace the engineering, power, instrument-making and chemical industries, the key sectors for technical progress.

But the working class does not confine its productive activity solely to industry, transport and communications. More than 8 million state-farm workers are engaged in arable and stock farming alongside the collective farmers. In 1970 the state farms accounted for 40 per cent of the marketable farm produce, while in 1940 their share was only 12 per cent.¹³ The increase in the composition of the working class of a stratum of agricultural workers so close to the peasantry—in the nature and conditions of labour and way of life—substantially extends inter-class contacts and helps to draw together the workers and the collective farmers and to consolidate Soviet society.

The working class, notwithstanding the increase in mechanisation and automation of production processes, is growing numerically. The workers now make up more than half (59.8 per cent) of all Soviet citizens (see Table 2). Numerically, the working class of the USSR as a whole increased from 23.7 million in 1940 to 66.2 million in 1971. Moreover, the number of workers in industry rose almost 2.6 times, in building about 4 times, and in agriculture 5 times.¹⁴ So the working class has become the most numerous class in Soviet society. But the point is not only its numerical strength. Lenin held that the role of the working class is determined above all by its role in social production, its organisation, revolutionary traits and ties with the other sections of the working people.

Determining the economic and social development of society the working class rightly plays the leading part in the life of the Soviet Union. Being, by virtue of its position, the vehicle of the ideas of

¹² V. I. Lenin, *Collected Works*, Moscow, Vol. 21, p. 71.

¹³ *The USSR in Figures in 1971*, pp. 178-179; *The National Economy of the USSR in 1970*, pp. 283, 404.

¹⁴ *The National Economy of the USSR. 1922-1972*, p. 345; *The National Economy of the USSR in 1970*, pp. 158, 412, 501, 509; *The USSR in Figures in 1971*, p. 177.

scientific socialism, the working class is the most consistent and determined champion of communist relations of production. It is the only class which is capable of abolishing forever the division of society into classes. The fundamental class interests of the working people are in the building of a classless communist society. This also meets the aspirations of other working people and social groups. Their transition to the positions of the working class creates the ideological foundation for the social unity of society, just as the development of the economy, the improvement of socialist production relations, the advance of the two forms of socialist property—state and collective farm-cooperative property—towards the single communist property of the whole people constitutes a reliable social and economic basis for the unity of Soviet society.

The contemporary Soviet working class is a worthy continuer of the great revolutionary cause initiated by preceding generations of workers. The working class, as emphasised in the Report of the CPSU Central Committee to the 24th Party Congress, is distinguished by intrinsic features of revolutionary schooling, a high degree of organisation and discipline and a spirit of collectivism. These traits were shaped among the workers in the long class struggle, and in the course of socialist construction. The working class asserts its right to act as the leading force in building communist society by its labour and political activity, selfless devotion to the ideals of communism and staunch support for the principles of proletarian internationalism. The Soviet working class has won this right by learning state administration for more than half a century, exercising its dictatorship in the period of building socialism, and then, with the victory of socialism, playing the leading role within the system of the socialist state of the whole people. In his speech at the 15th Congress of the Trade Unions of the USSR held in March 1972 L. I. Brezhnev described the Soviet working class as follows: "An advanced worker today is a man who has deep knowledge, a wide cultural horizon and a conscious and creative attitude to labour; he feels the master of production, a man responsible for everything that takes place in our society. Such a worker is politically active, he abhors laxity and irresponsibility and any shortcomings in the organisation of production. He is an irreconcilable enemy of any philistinism and any survivals of the past in the minds and behaviour of people.

"For such a worker the ideals of the Party, the ideals of communism have become the essence of his entire world outlook; they determine his actions, his attitude to people, his entire life."¹⁵

Today the creative aspirations of the working class are expressed in socialist emulation in which 77.5 million workers and employees participate throughout the country and its highest form, the movement for a communist attitude to labour which embraces about 41 million factory and office workers.¹⁶ The striving of the working people to

¹⁵ L. I. Brezhnev, *Following Lenin's Course*, Vol. 3, Moscow, 1972, pp. 483-484 (in Russian).

¹⁶ *Pravda*, June 16, 1973.

attain high performance indices, to advance culturally and technically and to introduce communist relations are organically merged in this movement.

The activity of the Soviet working class is an important factor in strengthening the world socialist system, in supporting the national-liberation struggle and consolidating the whole anti-imperialist front.

For all the diversity of forms in exercising the leading role of the working class in building communism, the main and decisive factor in its influence on the development of society is the guiding and organising activity of the Communist Party. The transition of the Communist Party from the party of the working class into the party of the whole people is proceeding apace under developed socialism. But even at the present stage of communist construction the Party preserves its class nature, being above all the party of the working class. Of the 3 million members admitted to the Party in the period between the 23rd and 24th Congresses almost 1.6 million are workers. In 1956 there were about 2.3 million workers in the ranks of the CPSU, in 1966 they exceeded 4.7 million and reached 5.8 million, more than 9 per cent of all the workers in the country, in 1971.¹⁷

Even in a developed socialist society, the working class represents a social community with definite inherent social differences. The vocational composition of the working class has changed radically, the result being an increase in skilled trades over heavy manual labour. The number of industrial workers has multiplied by 10 times since 1925, the number of those engaged in mechanised jobs by 18 times. The numerical strength of the working class in the most progressive sectors is growing at the fastest pace. While the working class in industry as a whole multiplied by a factor of 2.7 between 1940 and 1970, in the power industry the factor was 4.4, in the chemical and petrochemical industries more than 4.2, in mechanical engineering and metal working 3.6, and so on. Engineering workers are the largest contingent of the Soviet working class—36 per cent of all industrial workers.¹⁸

The growth of the general culture, education, political activity and socialist consciousness of the working class serves to promote its advanced, leading role as the builder of communism.

The elimination of basic distinctions in the content and nature of labour of individual social groups of workers, as a result of equipping modern production with the latest technology, is accompanied by a gradual levelling up in the culture and technical skill of these groups based on an advance in the education of the working class as a whole. In 1959, 386 per 1,000 workers had a higher and secondary education, while in 1970, the last year of the Eighth Five-Year Plan, the figure was more than 550. Compared with 1939, the number of workers with a complete secondary education, special or general, increased more than 30-fold. The level of education and the social and vocational

¹⁷ *Kommunist*, No. 13, 1971, p. 35.

¹⁸ Interview given by Corresponding Member of the USSR Academy of Sciences V. Starovsky, Head of the Central Statistical Board of the USSR. *Komsomolskaya pravda*, August 11, 1971; *The National Economy of the USSR in 1970*, pp. 158, 509.

differences are conditioned reciprocally. In mechanical engineering, for example, the average education of unskilled workers is 5-6 years', skilled manual workers, 8-9 years' and highly skilled workers, 9-10 years' schooling. Moreover, 45 per cent of the unskilled workers in 1970 were over 50 and 25 per cent, between 40-49.¹⁹

The working class has improved qualitatively chiefly through the influx of young people who, as a rule, have been given a good educational and vocational training. Between 1938 and 1940 vocational schools and factory training schools trained an average of 160,000 workers a year; in 1965/66 the number was already 1.7 million and in 1970/71, 2.6 million. At present the proportion of younger workers (under 34 years of age) is as follows: industry—54 per cent, building trades—61 per cent and transport—47 per cent. Great attention is paid to increasing the skill of the workers already engaged in production. In 1970 alone 9 million workers received advanced training, nearly six times as many as in 1940 when the figure was only 1,472,000.²⁰

The comprehensive mechanisation and automation of production facilitates the process of raising the intellectual level of labour. The technical reequipment of enterprises now under way determines the increase in the number of skilled vocations (adjusters, fitter repairmen, programmers, and so on). This process shows the trend for mental and manual labour to become more alike, which is also strikingly reflected in new forms of collective technical creative endeavour—design and technological offices, economic analysis offices, groups and laboratories of technical analysis and technical rating which are run by volunteers in their spare time.

The number of rationalisers and inventors rose substantially during the period of the Eighth Five-Year Plan (by 2 million) and in 1971 there were more than 5 million of them, including almost 3 million workers. Their activities yielded a saving of 12,500 million rubles during that five-year period. In 1940 about 202,000 inventions and rationalisation proposals were applied, in 1965 the number rose to 2,841,000 and in 1971, to 3,478,000.²¹

The processes under way in the ranks of the working class are part of the pattern of communist construction. "The Party will continue to direct its efforts to securing the growth and strengthening of the influence of the working class in all spheres of the life of our society and to making its activity and initiative more fruitful," L. I. Brezhnev stated at the 24th CPSU Congress.²²

The alliance between the working class and the peasantry is the political foundation of Soviet society. The change in the social aspect

¹⁹ See *24th Congress of the CPSU, 1971, Moscow, 1971, p. 88*; L. I. Brezhnev, *Following Lenin's Course*, Vol. 3, p. 483. *The Building of Communism and the Change in the Structure of Socialist Society*, Issue 1, Moscow, 1971, p. 41 (in Russian).

²⁰ *The USSR and Foreign Countries...*, pp. 166, 167. *The USSR in Figures in 1970*, p. 183; *The National Economy of the USSR in 1970*, p. 529.

²¹ *24th Congress of the CPSU. Stenographic Transcript, Part II*, p. 109 (in Russian); *The National Economy of the USSR. 1922-1972*, p. 109.

²² *24th Congress of the CPSU, 1971, Moscow, 1971, p. 88.*

of the collective-farm peasants, determined by the high rates of industrialisation and the specialisation and concentration of agriculture, continues under developed socialism.

The collective farmers have nearly half of the country's arable land, and about two-thirds of the socially-owned livestock at their disposal. The collective farms now own more than 2 million tractors (in terms of 15 hp units), 300,000 grain combines, more than 570,000 lorries and so on. At the collective farms occupations like tractor driver and combine operator, electrician and driver, land improvement worker and builder, adjuster who tends mechanised units predominate. In 1971 there were more than 2 million farm machine operators, 12 per cent of the total number of collective farmers, while in 1940 the figure was only 4.4 per cent.²³

The increase in the proportion of farm machine operators at the collective farms is determined both by their growth in numbers and by the gradual decrease of the number of peasants engaged in manual work. These changes are one of the most characteristic tendencies in the change in the intra-class structure of the collective-farm peasantry and the levelling up in the nature of labour of a large group of peasants and of industrial and agricultural workers. The extensive development of mixed state-collective farm production associations and enterprises, which provide a basis for ending the seasonal nature of collective farm labour and accelerating the conversion of agricultural labour into industrial-type labour is an essential factor in eliminating class distinctions and consistently drawing together the state and cooperative forms of property.

The way of life of the peasantry is being reshaped and their material well-being is improving under the impact of a whole range of economic, political and social changes in the country. The income received by peasants from collective farms is increasing. In five years (1966-1970) dwellings with a total floorspace of 183 million square metres were built in the countryside. The CPSU and the Soviet Government are ensuring a steady rise in collective farmers' pay, gradually bringing it up to the level of wages of factory and office workers. During the Eighth Five-Year Plan the wages of factory and office workers increased by 26 per cent and the labour remuneration of collective farmers by 42 per cent.²⁴ Pensions for collective farmers and other social payments have also been introduced. All these factors facilitate the levelling up of collective farmers with the working class and the intelligentsia.

The decrease of the rural population, an inevitable consequence of the higher degree of mechanisation and productivity of labour, is in no way diminishing the social role of the peasants as a class. The consolidation of the collective-farm system serves as the basis for its further development, for the advance of its cultural and technical level and political consciousness, which also draws the collective-farm

²³ *The USSR in Figures in 1971*, p. 142; *The National Economy of the USSR in 1970*, pp. 404, 412.

²⁴ *The National Economy of the USSR in 1970*, p. 539; 24th Congress of the CPSU, 1971, p. 137; *The USSR and Foreign Countries...*, p. 83.

peasantry closer to the working class. On the average the growth rates for education are higher in the countryside than in the city. The number of people with a higher education in the city in 1970 was about 3 times as high as in 1939, and in the countryside, 8 times. While in prewar years 6.3 per cent of all people engaged in agricultural production had a higher and secondary education, in 1970 the share rose to 49.9 per cent.

Alongside the advance in the general educational and vocational level of the collective-farm peasants, their political activity is increasing. By the time of the 24th CPSU Congress, collective farmers made up 15.1 per cent of the membership of the CPSU. As many as 615,000 collective farmers are deputies to the Supreme Soviets of the Union and Autonomous Republics and local Soviets, 28 per cent of the total number of deputies.²⁵

While pointing to the substantial shifts in the development of the collective-farm peasantry and its drawing together with the working class, it must be admitted that in conditions of developed socialism there are considerable distinctions between these two classes which follow from the existence of two forms of socialist property, the unequal level of development of the productive forces in industry and agriculture, and the distinctions in the division of labour.

Power capacity per person engaged in agriculture, which is the basis for the comprehensive mechanisation and automation of production in this sector and which leads to a radical change in the content, nature and working conditions of the collective farmers, still lags behind the corresponding indicator in industry. The proportion of people not linked with mechanised labour still remains high in the collective farms. The gap in the way of life, recreation, trade, public amenities and services in town and country has also not been bridged yet. The social and economic programme, mapped out by the Communist Party, is a major prerequisite for ending the lag of the countryside behind the city.

But already in developed socialist society, the common traits of the peasantry and the working class play an ever greater part. It was pointed out in the Report of the Central Committee to the 24th Party Congress: "The growth of the productive forces of agriculture, the gradual conversion of agricultural labour into a variety of industrial work, the cultural upsurge in the countryside and the remaking of rural life have led to changes in the peasant's social make-up and way of thinking. He now has more and more features in common with the worker."²⁶

The social importance of science has risen immeasurably with the scientific and technological revolution, and its influence has increased on all aspects of society. The progress of science and technology is the cardinal instrument in laying the material and technical basis for communism. One consequence of this process is the steep increase in

²⁵ "Report of the Central Statistical Board of the USSR", *Izvestia*, April 16, 1971 and *Pravda*, June 23, 1973.

²⁶ 24th Congress of the CPSU, 1971, p. 89.

the size of the intelligentsia. In 1926 there were only 2.9 million mental workers; in 1959, 20.5 million, and in 1971, over 30 million, or more than a quarter of the employed population.²⁷ The increase in the number of engineers and technicians has been exceptionally fast—faster than for other social groups. While in 1928 there were 38 engineers and technicians per 1,000 industrial workers, in 1971 the figure was 142. The joint efforts of scientists, and workers, of all Soviet people accelerate the pace of scientific and technological progress.

The development of society's spiritual life, protection of the health of its members, and the many and varied activities in moulding the new man enhance the role of the intelligentsia engaged outside the production sphere. The number of teachers and other educational workers and workers in cultural institutions, science, literature, the arts and the press is now over five million. More than 2.5 million doctors and other medical personnel are engaged in the health services. The total number of persons employed in health protection, social maintenance, education, culture, science and scientific service and art was over 15 per cent of the total employed population in 1970; in 1913 it had been less than 1 per cent, in 1940, 6 per cent, and in 1960, 11 per cent. During the Eighth Five-Year Plan period the number of scientific workers rose from 664,600 to 927,400, almost a ten-fold increase over 1940.²⁸ Science is increasingly becoming a direct productive force.

The numerical growth and greater significance of the socialist intelligentsia in communist construction do not detract from the leading role of the working class, whatever the revisionists say. The Soviet intellectuals, selflessly devoted to the ideals of socialism and communism, take an energetic part in creating the material and technical foundations of communist society, new spiritual values, and in the communist education of Soviet people. They are inseparably linked with the working class. Basically, they are men and women who come from among the working class and the peasantry.

The very increase in the numbers and importance of the intellectuals is part of the pattern of communist construction and a reflection of the fundamental interests of the working class. This is an aspect of the steady process of growth—taking into account the advance in the skill and education of workers and collective farmers—in the intellectual potential of socialist society, of the increase in the proportion of mental labour in conditions of the scientific and technological revolution which is taking place on the solid basis of developed socialism.

Proper understanding of the social and class relations under developed socialism precludes any counterposing of the intelligentsia to the workers and collective farmers and vice versa. It presupposes revealing the community of interests of all classes and social groups

²⁷ *The USSR in Figures in 1970*, p. 23; *The USSR in Figures in 1971*, p. 23.

²⁸ *The USSR and Foreign Countries...*, p. 160 (data for 1967); Interview with the Head of the Central Statistical Board of the USSR, V. Starovsky, *Komsomolskaya pravda*, August 11, 1971; *The USSR in Figures in 1970*, p. 191.

which is expressed in their energetic drive designed to build communist society. This is the kind of approach to this major problem that underlies the policy of the CPSU. The Resolution of the 24th Congress on the Report of the CPSU Central Committee reads: "The Congress regards it as the principal task of the Party's social policy to uphold steadfastly the leading role of the working class, to strengthen the alliance of the working class and peasants, to bring together the workers, collective farmers and the intelligentsia. all Soviet people, in their common labour effort."²⁹

SOME SOCIAL ASPECTS IN THE DEVELOPMENT OF THE UNION REPUBLICS. NATIONAL RELATIONS IN THE USSR

The comprehensive development of Soviet society would have been impossible without the truly tremendous successes in national relations. In the course of socialist construction the nations and nationalities of the Soviet Union have achieved a high level of development in all areas of life—economic, social, political. New industrial centres have served as a basis for the growth of a national working class in the Union and the Autonomous Republics and ensured unity in the social structure and political organisation of all the peoples of the USSR.

The resolution of the CPSU Central Committee "On Preparations for the 50th Anniversary of the Formation of the Union of Soviet Socialist Republics" notes: "Society as a whole and every nation and nationality have a social structure of one type which is made up of the working class, collective-farm peasantry and working intelligentsia."³⁰ The exploiting classes were abolished in all Soviet republics during the years of socialist construction. The working peasants in all non-Russian regions united in collective farms and tied their destinies firmly to socialism. The size of the working class from all the nationalities grew and their leading role was enhanced.

Between 1926 and 1949 the number of workers multiplied as follows: in Kirghizia by 5.1, Kazakhstan by 4.2, Byelorussia by 4, Turkmenia by 3.7, and the Russian Federation by 3.1 times. Comparing 1940 with 1971, the number of workers in the Russian Federation multiplied by 2.52; and in the Ukraine by 2.61; Azerbaijan by 2.74; Turkmenia, 2.76; Byelorussia, 3.22; Estonia, 3.57; Georgia, 3.59; Uzbekistan, 3.79; Latvia, 4.25; Tajikistan, 5.02; Kirghizia, 5.17; Kazakhstan, 5.52; Armenia, 6.65; Lithuania, 7.62; and Moldavia by 13.2. Moreover, the growth rate for workers of the indigeneous nationality was faster than the total increase of the working class in the respective republics. Thus, during the Second Five-Year Plan period the

²⁹ 24th Congress of the CPSU, 1971, p. 226.

³⁰ "On Preparations for the 50th Anniversary of the Formation of the Union of Soviet Socialist Republics", Resolution of the CPSU Central Committee of February 21, 1972, Moscow, 1972, pp. 16-17 (in Russian).

number of Kirghiz workers multiplied by 7 times, Kazakhs by 5, Byelorussians by 4.65, and Turkmenians by 3.8. In 1926 Ukrainians made up 49.9 per cent of all the workers of the Ukraine, in 1931 the percentage was 58.6, and in the middle of the Second Five-Year Plan period, 62.1. In Tataria the number of workers multiplied by 2.5 during the First Five-Year Plan period and of Tatar workers by 5. Between 1939 and 1959 the share of indigeneous workers in Azerbaijan rose from 29 per cent to 47.7 per cent; in Georgia, from 35.7 per cent to 48.9 per cent; in Uzbekistan, from 36.5 per cent to 43 per cent and in Armenia, from 77.9 per cent to 88.2 per cent.³¹

In a number of Union Republics as early as 1959 the proportion of workers began to exceed the proportion for the country as a whole. While the working class in that year made up 48.2 per cent of the population of the USSR, for Kazakhstan the figure was 58.4 per cent, for Estonia, 55.2 per cent and for Latvia 51.5 per cent. The faster growth rate of the working class in many Soviet republics was a result of implementing the Leninist nationalities policy aimed at abolishing the inequality of nations. This is directly linked with the higher growth rates in industrial output in these republics. Thus, while Soviet industrial output as a whole multiplied by 321 in 50 years (1922-1972), Kirghiz industrial output multiplied by 412, Tajik by 513, Armenian by 527, and Kazakh by 601. The serious social shifts in the non-Russian republics are also illustrated by the growth in the urban population. While in the whole country this rose by 67 per cent between 1939 and 1959, in Uzbekistan and Estonia it increased by 190 per cent, in Armenia, 241 per cent, in Kazakhstan, 242 per cent, and in Tajikistan by 265 per cent.³²

The growth in the number of workers and the increase in the proportion of workers in the population, the development of national personnel, the generally enhanced role of the working class in all spheres of the country's state, social, political and economic life in conditions of fundamental social changes in society—all this becomes the decisive factor in consolidating the fraternity and cooperation of all the Soviet peoples, in drawing together all the nations and nationalities of the USSR.

Changes in the various contingents of intellectuals are also an important social aspect in the development of national relations within the Soviet Union. To eliminate the cultural inequality inherited from the past, the Soviet Union for many years gave priority to non-Russian republics in making appropriations for education. In 1938, for instance, the per capita expenditure for education was 77 rubles in the RSFSR, 87 in the Ukraine, 90 in Kazakhstan, 99 in Byelorussia, 100 in Uzbekistan, 105 in Kirghizia, 122 in Azerbaijan, 136 in Georgia, 146 in

³¹ *The National Economy of the USSR. 1922-1972*, pp. 509, 524, 537, 549, 563, 574, 587, 600, 612, 624, 637, 649, 662, 674, 686; *The USSR—a Great Community of Fraternal Peoples*, Moscow, 1972, p. 281 (in Russian); M. I. Kulichenko, *National Relations in the USSR and Their Trends*, Moscow, 1972, pp. 339, 340-341, 448 (in Russian).

³² *The National Economy of the USSR. 1922-1972*, pp. 47, 557, 632, 645, 657; *The USSR—a Great Community of Fraternal Peoples*, p. 294.

Turkmenia, and 154 in Armenia. A large intelligentsia was developed in every republic; moreover, it grew primarily on account of the local nationality. This is indicated, in particular, by data on scientific personnel. Between 1950 and 1971 the number of Russian intellectuals multiplied by 6.73; Ukrainians by 7.35; Byelorussians by 7.57; Kazakhs by 11.65; Turkmens by 15.15; Tajiks, by 15.18; Uzbeks by 15.28; Moldavians by 20.8; and Kirghiz by 22.35. For the USSR as a whole the number of scientists rose by 9 times between 1940 and 1970, in Tajikistan and Lithuania it rose 14 times, Kazakhstan, 15, Kirghizia, 18 and Moldavia, 35 times. The same trends have been observed in recent years in the growth of the number of students at universities and institutes. Whereas the total number of students in the USSR grew by 55 per cent between the 1962/63 and the 1969/70 academic years, the number of Kazakhs, Moldavians and Turkmens almost doubled and of Uzbeks, Azerbaijanians, Kirghiz and Tajiks more than doubled.³³

The socialist solution of the national question, the abolition of national oppression and inequality, the progress of Soviet nations and the strengthening of their mutual friendship are achievements of legitimate pride for all peoples of the USSR. These achievements of the Leninist nationalities policy are accepted by the working people of the world as clear evidence of the superiority of socialism over capitalism. "Summing up the heroic accomplishments of the past half-century," L.I. Brezhnev said at the joint celebration meeting of the CPSU Central Committee, the USSR Supreme Soviet and the RSFSR Supreme Soviet on December 21, 1972, "we have every reason to say that the national question, as it came down to us from the past, has been settled completely, finally and for good."³⁴

The celebration of the 50th anniversary of the formation of the Union of Soviet Socialist Republics in the USSR and in many foreign countries offered new striking evidence of the triumph of the Leninist nationalities policy. The presence of representative delegations from more than 100 countries at the festivities and their speeches to Soviet people once again demonstrated the tremendous international significance of the Soviet Union's achievements.

What is it that unites the peoples of the USSR by unbreakable ties, turning their friendship and cooperation into one of the prime motive forces of Soviet society in accelerating social progress?

Socialism which has now reached a high stage of development and has become a reality even in the remotest corners of the country where half a century ago, to use Lenin's expression, the patriarchal system and savagery prevailed, is the main factor which facilitated the cohesion of all nations and nationalities.

³³ See A. Azizyan, *The Leninist Nationalities Policy in Its Development and Operation*, Moscow, 1972, p. 253 (in Russian); *The National Economy of the USSR, 1922-1972*, p. 105; *Education, Science and Culture in the USSR*, p. 247; M. I. Kulichenko, *op. cit.*, p. 438.

³⁴ L. I. Brezhnev, *The Fiftieth Anniversary of the Union of Soviet Socialist Republics*, Moscow, 1972, p. 11 (in Russian).

The interests of all the peoples of the USSR have drawn closer together and have merged on the basis of the community of their socialist aspirations and communist ideals. Life has justified in full measure the prediction of Marx and Engels that "in proportion as the exploitation of one individual by another is put an end to, the exploitation of one nation by another will also be put an end to. In proportion as the antagonism between classes within the nation vanishes, the hostility of one nation to another will come to an end."³⁵

The socialist economy of every Republic and region is a component of the economy of the whole country, organically linked with it by thousands of unbreakable threads, and it develops according to the general state plan. Socialist relations of production are the *economic basis* of the unity of all Soviet nations. The single multinational socialist state, common for all Soviet people, and the single Soviet system of state administration for all the constituent Republics make up the *political foundation* of the unity of all nations and nationalities in the USSR. The leading role of the working class in the whole country and in every constituent Republic, its firm alliance with the collective-farm peasantry and the intellectuals of all nationalities and the drawing together of all classes and social groups in Soviet society provide the *social basis* of the unity of all Soviet peoples.

Community of the aims and the tasks of communist construction, with Marxism-Leninism as the practical guide for all the peoples of the USSR, represents a force which cements the *ideological unity* of all socialist nations. The international principles underlying the structure and activity of the Communist Party of the Soviet Union unite the Communists of all nationalities in the USSR and, through them, all the working people into a single close-knit family of socialist peoples. The mutual enrichment and intertwining of the national cultures of the Soviet peoples, the community of their socialist content and the increased importance of the Russian language as a medium of contact between nations lead to an increasingly close *cultural relationship* between the nations of the USSR. In the course of socialist construction all these factors have determined the shaping of a new historical community of people—the Soviet people. "New, harmonious relations, relations of friendship and cooperation," it was pointed out in the Report of the Central Committee, "were formed between the classes and social groups, nations and nationalities in joint labour, in the struggle for socialism and in the battles fought in defence of socialism."³⁶

The rise of this new historical community does not, of course, mean that national distinctions disappear in the USSR. The Soviet people represent an organic fusion of all the nations and nationalities of the USSR on the basis of developed socialism, the community of economic, social and political life of ideology and aims. One of the characteristics of this community of people is the further development

³⁵ K. Marx and F. Engels, *Selected Works*, Moscow, 1969, Vol. I, p. 125.

³⁶ *24th Congress of the CPSU*, 1971, p. 92.

of Soviet traditions and customs, and a Soviet way of life. The dual process of the further advance of the individual socialist nations and their gradual drawing together is the main content of national relations in the USSR.

The gradual drawing together of Soviet nations and nationalities is accompanied by due regard for the national features of the individual socialist national cultures. "Constant consideration for the general interests of our entire Union and for the interests of each of its constituent republics," it is pointed out in the Report of the Central Committee, "forms the substance of the Party's policy in this question."³⁷ The further advance of all socialist nations and their gradual drawing together should be facilitated by education of all the people in the spirit of Soviet patriotism and socialist internationalism, respect for all nations and nationalities, which is irreconcilable with nationalism, chauvinism and nationalist narrow-mindedness.

The Marxist-Leninist understanding of the nationalities policy and a class approach to problems of national relations preclude the display of national egoism and conceit, parochialism and admiration for archaic national features. This is the kind of approach to national problems that Lenin advocated. He told Communists: "One must *not* think only of one's own nation but place *above it* the interests of all nations, their common liberty and equality. But in all cases ... fight *against* small-nation narrow-mindedness, seclusion and isolation, consider the whole and the general, subordinate the particular to the general interest."³⁸

In applying the socialist nationalities policy, the CPSU teaches us to avoid ignoring or exaggerating national features to foresee the historical perspective of the development of nations and national relations, to work for new successes in the gradual drawing together of socialist nations and to strengthen the economic, political, social and cultural community of the Soviet peoples.

* * *

The broad social programme mapped out by the 24th CPSU Congress is designed to ensure further progress for every social group, nation and nationality, for the Soviet people as a whole. High growth rates in socialist production, its greater effectiveness and growth in labour productivity will serve as a basis for a further substantial advance of the standard of life and culture of the people, levelling up of town and country, reduction in unskilled and heavy manual labour, and ever more favourable conditions for work and leisure and the full development of the capabilities and creative endeavours of Soviet people.

The accomplishment of all these tasks in conditions of the further strengthening of the Soviet state and the further development of socialist democracy is subordinate to attaining the ultimate goal—the creation of a socially homogeneous, classless, communist society.

³⁷ 24th Congress of the CPSU, 1971, p. 92.

³⁸ V. I. Lenin, *Collected Works*, Vol. 22, p. 347.

International Congresses of Philosophers, Orientalists, Anthropologists and Ethnographers

Man — Science — Technology*

Man, his development and his future, his essence, his entire life and work—this is a major content of Marxist-Leninist theory. The problems of man and his ties with science and technology have always been, and remain, in the focus of attention of the Communist Party of the Soviet Union. We are today witnessing and participating in the solution of these problems by the Party in the new historical conditions, in conditions of a developed socialist society which require an ever deeper study of the vast, exceptionally diverse range of questions of theory and practice of socialist construction, a study of the "human dimension" of scientific and technological progress, of everything it brings people and demands of people.

The scientific and technological revolution, which has become a part of the historical process, is just as contradictory as that process itself; its intricate relations with society, the economy and man are of a dual nature, while its social consequences are unusually deep.

Their examination has become the subject of a lively polemic and keen ideological struggle between representatives of the most diverse trends of philosophical thought. In this polemic Marxist researchers proceed from the concept of the contradictory nature of relations between society and man, on the one hand, and science and technology, on the other, and the humanist trend of their development, the unity of social, scientific and technological progress in socialist society. They seek thoroughly to study what influences on the life of man exerted by the swiftly developing technology are predetermined by the social conditions of its application and, consequently, can be changed only by altering these consequences, and what social aspects of technology and science can be changed only through the further development of technology itself, of science itself, inasmuch as they are inherent in them and are universal. Such a study is the theoretical basis for social control over the development of science and technology which the capitalist world does not possess.

But while the positive interaction of man and technology, and the fusion of the advantages of the socialist economic system with the scientific and technological revolution are in the centre of attention of social science in the socialist countries, the minds of Western bourgeois researchers and doubly so the attention of sensation-seeking political journalists are concentrated on the consequences of scientific and technological development adverse for man. This is fully understandable.

* Abridged leading article of *Voprosy filosofii*, No. 8, 1972.

The bourgeoisie has always altered the face of the world, created tremendous productive forces, cardinally changed the way and content of human thinking, broken man's former attitude to nature, all the traditional socio-cultural mainstays of pre-capitalist society at the price of enslaving man by the world of things, and ruthlessly turning him into an appendage to the machine, at the price of giving preference to technology over man and implacably oppressing man by the things he himself has created.

Entering history as a part of nature and, in a certain sense, always remaining a force of nature, man transforms nature and converts it into a part of himself, into a part of the "inorganic body", as Marx put it, of his social being. But to the extent to which his own human being remains uncontrolled by him, man becomes dependent on the things he himself has created. And since the spontaneous social forces continue to dominate over man, specifically under capitalism, the inclusion into social being of new elements of nature transformed by the labour of man, liberating him from the dominance of its spontaneous forces, simultaneously leads to the subordination of man by things and creates a new world of the dominance of things over man. "Our own product rose up against us," Marx wrote. "It seems to us to be our property but in reality we are its property."¹

The scientific and technological revolution extends to an exceptional degree the possibilities of human activity, the self-assertion of man in the practical creation of an object world and imparts an exceptional rate and scale to the process of humanising nature. But these new possibilities, unknown in history prior to our days, enter into sharp contradiction with the very substance of capitalist society which proved to be socially unprepared and basically contrary to the process of "man's development of nature", and its conversion into a product and reality of man.

The expression of the human essence in an object of nature transformed by the practical action of man led the capitalist world to irreconcilable contradictions. Extension of man's freedom in relation to nature turned for him into a loss of freedom in relation to the second, artificial nature he had created, to the dominance of past human activity, of materialised labour, over living labour. The avalanche of new scientific discoveries and achievements of technology, merely deepens the contradiction between the course of scientific and technological progress and the evolution of capitalist society.

What is more, the spontaneous suppression of man by the world of things in this society is supplemented by the conscious utilisation of the achievements of the scientific and technological revolution for the purpose of the social enslavement of man. Social "management" in capitalist society clearly gravitates towards creating and utilising to the maximum the efficient "technology" of manipulation, with the transfer into this sphere of the methods of the natural sciences which are equipped with the well-elaborated methods of collecting and proces-

¹ K. Marx and F. Engels, *From Earlier Works*, 1956, p. 560 (in Russian).

sing information, a formalised machinery of research and decision-making, modern methods of modelling, and so on.

Science and technology make it possible to assess natural objects, applying the so called precise methods of measurement and explanation. The possibilities of cognising nature in this respect are limited only by the development level of science and technology themselves and the subject of study. Bourgeois social science tries to follow the same path and to achieve a similar sovereign position with regard to social problems as the natural sciences in relation to nature. It is this that creates in the minds of bourgeois scientists the illusion that it is possible to influence society by the same methods which the scientific and technological revolution provides for the natural scientist and engineer. Associated with this is also the calculation that scientific methodology will rule out political accidents and administrative arbitrary action in science and politics. But this approach is based not only on the idealisation of the omnipotence of science, not only on the ideal of a rational technocratic reason which rules the world and introduces into it a rational element and order, a continuation and renovation of the bourgeois rationalist traditions of the West; it is based also on the aim of accomplishing a definite social task, because on this point the proponents of rationalisation of social relations wittingly or unwittingly draw close to the "manipulators".

For all the illusory nature of the hopes of technocracy to gain commanding positions in society, its striving to carry over to society and man the methods of managing production with its characteristic regime of subordination, rigid rules of behaviour, regimentation of activity, and so on, its striving for political power, strip it of its disguise of disinterestedness, and technology and science of their vaunted neutrality.

Such aims of management bring into the foreground the materialised form of human activity, while man himself is regarded as a semblance of a technical object, as an element of the world of things who by his functioning ensures the existence of this world. Consistently logical in this respect is the quest for techniques of influencing this "object" which would ensure control over individual behaviour and mass social movements, the conditioning of social consciousness and even the possibility in future of influencing the mental and genetic parameters of man.

When progressive or simply logically-thinking scientists in capitalist countries come out against extending to society and man the subordination methods created by man for harnessing nature, against creating a technology of social suppression, this protest quite often leads them to doubting the possibility of knowing social phenomena and the desirability of interfering and changing something in them. Hence the widespread pessimism among them—a reflection of the deep contradictions of bourgeois society's reality—the conviction that a world outlook which proceeds from confidence in the boundless might of man, a world outlook optimistic in its very essence, inevitably leads to the dominance of "technical" thinking and to the total technicalisation of the human being.

Marxist researchers are aware of the complexity of the problems facing socialist society which is intensively developing social relations, science and technology. They seek to extend the sphere of study devoted to the influence exerted by scientific and technological progress on social management.

The scientific and technological revolution multiplies many times over the number of social phenomena which have to be regulated, complicates many social processes and makes them highly dynamic because it constantly recreates the material conditions in which they take place. It leads to a sharp reduction of the former social groups, to the appearance and growth of new ones. The progress of technology and science intensifies the urbanisation of entire countries or their individual regions, demographic development proceeds at a fast pace, various states of mass consciousness and public opinion succeed each other, and so on.

New problems also constantly arise because of the changes in man's place in the social structure of socialist society. Varied social ties are swiftly increasing and are becoming more complicated quantitatively and qualitatively: the share of many previously non-existent or unimportant groups of the population is increasing, its mobility is sharply rising—the growing social and territorial mobility of the population brings out especially clearly the social effect of the development of the means of transport and communication, the general spread of industry; the national composition of a number of regions of multinational socialist countries is intensively changing, particularly that of the urban population; the local seclusion of formerly predominant one-nation regions is giving way to a wide influx of multinational groups of the population from the outside; the division of the social structure along regional, sex-age and family lines, according to the ability to use spare time, social activity, participation in spiritual and artistic life, and so on, is becoming more noticeable in society. The movement of the social structure, the existence and shifting of man within it demand constantly controlled intervention which becomes more efficient thanks to the wide use of data of the corresponding sciences and the application of modern technical facilities of management.

Society is constantly faced with the need to coordinate the swiftly growing number of different and, moreover, unevenly developing processes. It must bring technological and scientific development in conformity with the advance of production relations, the relations between man and society, man and the collective, between people, between all types of communities (ethnic, political, ideological, cultural, national, and others), between the collective and society.

The progress of science, technology and production constantly places people, directly or indirectly, in situations which require a ramified and at the same time efficient managerial apparatus and constant flexible intervention in the affairs of society. A characteristic feature of such management is its "depth", i.e., the scale and intensity of the social consequences of any substantial action of management, whether it concerns "purely" economic guidance of industry or the

regulation of social processes, and also the mass nature of management, of managerial decisions which simultaneously encompass large aggregates of men and equipment.

In conditions of the intensive development of the technology of the mass media, special social importance is acquired by the number and quality of the regulators of society's life. New formal and informal associations and communities, whose number tends constantly to increase, are added to the traditional factors of regulation with their traditions, values and similar orientations in each concrete society.²

Man experiences the intensive and, moreover, frequently contradictory effect of all these factors which regulate his life, activity, behaviour and tastes, factors buttressed with modern technical facilities of organisation, mass information and manipulation media on a scale that he often becomes unreceptive to part of the influences or is compelled to choose, to the extent of his own possibilities and under the influence of the immediate environment, some guidelines of behaviour, rejecting others. In capitalist society this saturation with the technology of management gives rise, among other effects, to indifference, to inner withdrawal, to holding aloof from the big problems of society's life, which is so characteristic of the bourgeois culture of our times. The swiftly growing constructive and destructive force of technology and science makes particularly intricate the correlation of the decisive role of the individual decision vested with appropriate powers and the making of a decision by a class, by society as a whole. In imperialist states which are capable of threatening the peace and are armed with means of mass repression and destruction, this problem becomes exceedingly acute.

The repressive behaviour of imperialism outside its national borders arouses particularly justified alarm. The military-technological revolution arms imperialism for the continuation outside, by military means, of the internal policy of suppression. It is the existence of capitalism and the strategy of coercion and the arms race imposed by it on mankind that has made the military-technological revolution an organic part of the general scientific and technological revolution, although the former is designed to destroy the productive forces of society, while the latter aims to promote their development. This situation often gives rise to the delusive notion about military production as the motive force of scientific and technological progress. Such a notion is engendered by the force of things: the production of weapons, and facilities for delivering and servicing them is given priority and outstrips output in analogous peaceful sectors of the national economy. Capitalist society suffers more and more deeply

² The spread of informal organisations is directly linked with the development of science and technology. Most frequently they are professional associations. For example, according to R. S. Bates, the number of various scientific societies (general and specialised, professional) in the United States rose from 4 in 1800 to 993 in 1955 (including 63 general scientific societies, 153 societies of historians and historians of science, 53 societies of natural history and the biological sciences, 40 associations for the study of special subjects, 53 professional associations, 40 associations of teachers, and so on). See R. S. Bates, *Scientific Societies in the United States*, New York, Columbia University Press, 1958.

and painfully from the contradiction which can engender only an acute social and political crisis: not peaceful but military production, the creation of means of destruction are becoming for it the major sphere for the development and application of science, improvement of technology and an essential element of anti-crisis measures.

Contradictions of this kind, the anomalous position of military production in capitalist society, nurtures the philosophy and psychology of coercion, a characteristic example of which is provided by the sentiments of a considerable part of the population in the United States which is torn by deep political, racial and other conflicts. Here an acute problem arises, namely, the behaviour of man who comes in contact with weapons for the use of which he is being trained. We should not forget the experience of the events which preceded the Second World War when "heroic" worship of arms and destruction was fanned in Hitler Germany. The ruling classes in a number of countries are now trying to recreate a social climate suitable for stimulating bellicose sentiments. The drawn-out conflicts in the Middle East and Indochina are alarm signals of this danger.

Thus, when we speak of the social meaning of science and technology and become convinced of the dangers which their application in capitalist society brings to mankind, we draw the only possible conclusion that, together with the abolition of capitalism, there will also be abolished the danger of turning the achievements of man against himself.

But the problem of the contradictory nature of relations between science and technology, on the one hand, and society, on the other, is much broader than the problem of the socially determined different directions of the application of scientific discoveries.

When he laid bare the contradictions between man and the second nature he creates, Marx at the same time pointed to the rise of a new type of relations between man and his products. He demonstrated that the share of material connections grows already in the capitalist world; the production organisation of social relations breaks up their corporative organisation or former methods of organisation of man's consciousness and behaviour, underlying his former relations with the instruments of labour in craft and manufactory production. Today all these processes are intensified many-fold by the scientific and technological revolution. There is a universal break-up of the former attitude to nature, to the socio-cultural mainstays that have taken shape over the centuries, to traditional types of regulation of natural personal ties between people; local seclusion is broken up and replaced by high mobility; traditional methods of accumulation of knowledge and skills give way to qualitatively new processes of cognition and man's activity which remakes the world. The avalanche of new processes in human activity, this entire radical break with traditions, gives rise to a whole stream of problem situations which attract the attention of researchers.

First of all, there is a number of problems connected with obtaining scientific knowledge and utilising it. Take the problem of understanding the knowledge gained by science which by the very nature of

its translation is inevitably reduced quantitatively and qualitatively. This leads, on the one hand, to the accumulation of unutilised knowledge (the "information explosion" further exacerbates this situation) and, on the other, to failure by society to understand the role and achievements of science, its needs and demands which already today is unable to fully understand what science in the aggregate, leave alone in details, "doing" and what it holds in store for mankind.

The consciousness of man inevitably lags behind understanding of the laws of nature he himself discovered and the artificial environment he himself created. Man does not manage to follow the stream of new discoveries of science and achievements of culture and, even less so, to assimilate them. That is why the use of technical devices for the accumulation, reproduction, transmission and processing of information is, apparently, no less an important event for the culture of our age than the invention of book printing was for its epoch. New discoveries and inventions in the technicalisation of knowledge and memory make it possible to a considerable extent to eliminate the "crisis of information". It is not excluded, incidentally, that they will have not only a positive but also a negative effect on the natural abilities of man who gains the possibility of shifting part of his intellectual efforts onto instruments.

A rather contradictory situation also arises within the bounds of knowledge necessary and available to man. On the one hand, from the very beginning of modern science it itself renounced the "secrecy of methods", secrecy of the craftsman zealously guarded by the adepts of one or another school, the proponents of a definite system of scientific thought. Today, because of the massive scale of scientific activity, and the accessibility of knowledge, science has even less grounds and facilities for preserving this secrecy. But, on the other hand, the secrets of knowledge are multiplied for a considerable number of people already for different reasons. They are engendered not only by the crisis of information, its surplus but by the very nature of its production and transmission.

Man has always taken for granted a considerable part of the information about the world and the socio-cultural knowledge passed on in society from one generation to another. A certain part of such information (above all religious) has been eliminated in contemporary society or converted from implicitly accepted tradition into knowledge. But knowledge itself, notwithstanding the continuous expansion of the sphere of the conscious, unwittingly becomes to a large extent axiomatic for the person who does not participate in obtaining it.

Yet the constant swift development of knowledge makes this participation increasingly fragmentary. In present-day conditions man cannot and must not verify a considerable part of the scientific and technological knowledge with which he comes in contact directly or in a mediated way. It must be sufficient for him that such verification and the obtaining of knowledge are accessible to other members of society, a collective in each given, relatively narrow sphere of knowledge. Everything else he must take for granted. At this level individual consciousness and social consciousness assimilate and process a

considerable part of information. The development of the consciousness of the individual and of society thus also consists in the greater expansion of the sphere of the realised, consciously assimilated and independently created values and the emergence of ever new spheres where man encounters knowledge new for him and which he is expected to take for granted. The subsequent conscious perception of these spheres of knowledge taken for granted is a process of progressive development of the consciousness of the individual and evidence of his active creative perception of the world.

It must be said that the development of science and technology has greatly extended the "sphere of trust" in society and at the same time enhances the importance of communication and shared responsibility of people, makes them more dependent on each other. This trust represents specifically one of the essential aspects of culture as a system of relations and the knowledge of the social and natural sciences which arises in these relations.

Man cannot exist in the contemporary world without this trust. Not knowing how the conclusions of science were obtained and to what consequences they lead, man is compelled to take them for granted. But this relation of trust is also fraught with the danger of man's alienation from the results of scientific studies and technical achievements and of their being made a fetish, and in religious consciousness—with the danger of mystical understanding of scientific and technical creative endeavour and consequently with a crisis of trust in science and technology.

There is a conflict between the industrial organisation of science, the existing system of scientific information (the time lag and the scale of publications, the ballast of excessive information, and so on) the need for constant and swift information. This conflict turns into a contradictory, although natural, coexistence of the industrial organisation of science and small groups, unofficial collectives and ties. The latter often are of decisive importance in the life of scientific and production-technical schools and trends. In any case the organisational imperfection and excessive administration, the rigidity of "big science", on the one hand, and the existence in science of informal relations which do not always yield to control by society, on the other—these are two diametrically opposed parameters of science.

Science now lays claim to the material resources of society on such a threatening scale that the question naturally arises of the impossibility of "maintaining" such a costly institution. A case in point is the rejection by insufficiently powerful states of a number of the most costly projects. This, in turn, results in that the most advanced studies are increasingly concentrated in the biggest countries of the world, not only because the development of science is in definite conformity with socio-economic and cultural development but also because of purely financial and production factors. This adds to the unevenness of the scientific and technological revolution; and the development of man, which is one of its general and cardinal laws, becomes the prerogative of the more developed states from which

category not only the Third World countries but also an entire group of industrially developed states fall out. The old criteria of a country's intellectual potential no longer hold good if it does not rest on a potential of industry and manpower resources. But let us also note this point—even for the biggest states in the world the carrying out of some global projects of space exploration, use of the atmosphere and World Ocean and penetration into the depths of the planet also involves considerable economic effort. In this situation science, as time goes on, can play an integrating role for mankind because the pooling of efforts and resources by many countries will be increasingly required for solving the most complex problems of harnessing the forces of nature.

The relationship between man and technology is constantly becoming complicated and simplified. Practical activity, the results of which are subject to man's control, extends and non-freedom, connected with his activity, narrows. Technical tasks of partial operations are simplified because in this way (by reducing the work motions, the distance of production movements, greater specialisation of tools and fixtures, and so on) labour productivity is raised.

Any technological process is improved by increasing the number of independent operations which are differentiated in the degree of responsibility and are united in a definite ordered sequence. Similarly, sectors of production are singled out. Hence the constant specialisation and differentiation of workingmen, which at a certain level acquire social features: a division of people in the labour process takes place and simultaneously their interdependence is increased. Thus, large-scale machine-based and, even more so, automated production not only unites and organises people into a collective, it also isolates them from each other and from the final product.

Up to the automation of production there exists and cannot but exist a semblance of labour operations of the man and the machine which makes it possible to transfer the functions of man to technical devices. The scientific and technological revolution removes this semblance. Moreover, it creates a fundamentally new relationship between man and technology: the possibility of integration of production processes in single chemical, biological and bionic processes of transforming natural substances.

The development of technology and the productive forces makes it possible fundamentally to change, on this basis, the relationship between man and technology, to adapt not man to the machine, but the machine to the man, when the machine is regarded as a system, the social aim of which is systematically to develop man. Thereby a basis is created for rejecting the principle of maximising intensity and its replacement by the principle of optimising working conditions, of taking into account and utilising the potentialities for raising the labour productivity, skill and education of man, his role as the factor which determines economic growth. This position provides for considering the psychological, aesthetic and physiological conditions of work, the needs of man (in the broader sense) on a scale which formerly was utterly inaccessible.

This revolution in the theory of organisation and management is a reflection of the changes in the entire system of the productive forces which rest on the revolutionary changes in the material and technical basis of society. In this connection it was emphasised in the Report of the CPSU Central Committee to the 24th Party Congress that "improvement of management is an important component part of the Party's entire activity in directing the economy".³ It is clear that here a tremendous part is played by the social sciences.

Mechanisation has replaced man only in one phase, namely, the performing phase of the individual working cycle and left to man the performance of all functions of management of the machine at two other phases, that is, the preparatory and control phases of every individual working cycle. Automation replaces man in these phases as well, leaving him the function of management not of individual cycles, but the chain, the flow of these cycles. Thereby the performing functions of man—the direct producer—become the functions of management; he is increasingly turned into the leader of the working process. The main emphasis in the future working process will be shifted to its preparatory phase (designing, planning and forecasting, and so on); the quantity of engineering labour and the role of the fundamental natural and technical sciences will rise.

The consequences of scientific and technological progress most serious for mankind as a whole and for individual societies and classes begin where the duality characteristic of it makes it possible to choose between the positive and the negative effect of applying technology. The increase in the number of alternatives, determined by the appearance of ever new scientific discoveries and technological developments, also increases the possibility of negative decisions.

In principle, any technical device contains a dual element of creation and destruction. It consumes the object of labour and leads to production waste, on the one hand, and creates a product of labour, on the other. A lathe on which a part is turned reduces some of the metal into shavings, an automobile which serves as an efficient means of transport, emits exhaust gases because of its design and not for any other (including social) reasons. That is why the new possibilities of technology bring society also new, negative social consequences which are at times unexpected.

Deep contradictoriness is inherent in the interaction between the material world of technology and society and man because of the very processes of objectification and deobjectification which underlie this interaction.

Thus, influences inherent in technology and science as relatively independent spheres produce both positive and negative social effects in the system of society and man-science-technology-production. The increase in the quantitative and qualitative characteristics of all the elements of this system increases their interdependence and, consequently, all possible disturbances in their interaction. Their instrumental nature demands that they function and develop not only expedient-

³ 24th Congress of the CPSU, 1971, Moscow, 1971, p. 73.

ly from the viewpoint of their own properties but also make it possible consciously to accomplish social tasks with the help of definite methods accepted in the given social system.

This demand applies above all to society's struggle with the socially dangerous features inherent in technology which are now causing growing anxiety and becoming the basis for ideological speculations by bourgeois theoreticians who seek to divert from capitalist society in general any accusations of applying technology to the detriment of man.

The profound influence exerted by science and technology on culture has also become the object of numerous controversies in contemporary philosophical and sociological literature. Indeed, this process encompasses wide masses of people in industrial countries and tends to spread to ever new regions.

The massive spread of culture leads to the ousting of its archaic types, for example, rural culture, and to the spread of one dominant, urbanist type. But this levelling must be regarded as negative only if it is proved that culture within the bounds of only this type does not allow for internal differentiation and is devoid of (specifically for this reason) integrity and genuine wealth.⁴

Culture "for all" does not yet signify impoverished culture, and the spread of culture among the masses is not the same thing as what is known as the mass, commercialised culture of bourgeois countries. With the help of new technical facilities it is possible to spread not only meaningless culture, exploiting the undeveloped perception of the masses which is constantly nurtured by the selfsame facilities. The modern technology of the mass media makes it possible also to spread the finest examples of the loftiest culture. It is in this possibility that the exceptionally important social role of the revolution in the technology of the mass media will increasingly tell.

The difficulties and contradictions encountered by the contemporary man on coming in contact with technology or consuming the results of scientific and cultural development, also arise in consuming things and perceiving new forms and ways of life. The opinion is current that man consumes with comparative ease and readiness the goods offered him by industry. Moreover, it is assumed that man is highly adaptable and easily conforms to the most diverse conditions of existence. Indeed, the inertia of the consumer is overcome rather quickly, even the routine of customs and traditional mainstays is broken with relative ease, although its traces are often preserved for a long time. But studies show that consumption (in the broader sense of the word) develops in man new social traits, specifically a high selectivity of interests and tastes, which is reflected in consciousness in the form of conflicts with production and people. It very distinctly

⁴ Such diversification is the "responsive reaction" to the modernisation and levelling of culture which has emerged particularly in recent decades: a certain exotism of cultural quests, striving for folklore, local lore, renaissance of the finest models of past culture, and so on. And if for various reasons such quests at times are made from negative positions, they must not overshadow the positive phenomena which enrich culture.

shows that the combination of the old and the new knowledge, of former, inherited customs and new habits is a problem of seriously remoulding consciousness which can be adequately solved only in conditions of a socialist society.

Even more complex and inertial is the attitude of man to the creation of new technology, to the solution of research problems. While a person feels considerable difficulties in the process of deobjectification of the world of things he created, even more effort is required for the process of objectification.

In our times technology constantly places man in unusual situations. Strictly speaking, any contact with unfamiliar technical devices and technological processes, a clash with an unstudied scientific problem represents a new, unusual situation for man. It is a distinctive feature of our epoch in this respect that unusual situations become usual, become the rule in the activity of an increasing number of people. Such a situation is conflicting in its very essence because it includes a continuous regearing of consciousness, the rejection by it of some established principles and the assimilation of others which are new and not customary. It leads to the rapid obsolescence and devaluation of generally recognised ideas and to the possible loss of prestige by former authorities. Even the consumption of new things and new knowledge signifies to a certain extent a conflicting situation for man's consciousness. Adequately full consumption brings with it a whole chain, a flow of such situations.

Thus, life itself demands of man constant mobility of consciousness and behaviour. The shaping of this flexibility and constant readiness for swift reactions is a definite link in the development of man, of the comprehensively developed individual.

The development of man's essential forces is the purpose of communist society. It also includes the development of his physical and intellectual resources. It is a fact that man does not utilise in full measure even a small part of his possibilities. The exceptional development of some faculties by gifted or specially trained people, as a rule, is accompanied by the quite ordinary development of their other natural intellectual faculties and physical abilities.

Moreover, the social and natural elements of man can be non-correlated in general. Yet it is their harmonisation that to a large extent predetermines the versatile development of the individual.

All this and many other problems of our time directly link us with problems of the future. Heightened interest in the future is also largely dictated by the rapid development of science and technology.

Studies into the relations between man and science and technology, which arise in the process of the scientific and technological revolution, are today oriented on the solution of these problems which already in the lifetime of our generation will become problems of the life of the masses.

The study of the problems of man in connection with the scientific and technological revolution is not an aim in itself. It is necessary for elaborating a general concept which could serve as a theoretical basis for practical actions in moulding the new man of communist society.

Contemporary Science and Humanism

The world is at increasing speed being drawn into the rapid progress of science and technology, called into being by the greatest revolution in human knowledge. It began at the turn of the century and has since been involving ever new spheres of productive and spiritual activity, changing them, and with them changing the individual, his way of life, labour, his thinking, his emotions and consciousness. The inexhaustible possibilities and advantages of this progress, its content and its purpose have become crystal clear, but so too have some phenomena, fraught with danger for the future of humanity and connected with the specific nature of the primary stages in this revolution and its development in the struggle between the two systems—capitalism and socialism. This has revealed, as never before, the fusion of scientific and technological progress with social factors, with the conditions in which it is proceeding and, finally, with man himself, the focal point where the "lines of force" of science, technology, culture and the entire history of the world cross.

I. MAN AS THE ULTIMATE AIM OF SOCIAL DEVELOPMENT: SOCIAL AND HISTORICAL FOUNDATIONS OF HUMANISM

The problem of man—his position in conditions of the present and his future, his social development and individual fate as a person, his active and growing impact upon his surrounding and, at the same time, his progressive dependence upon these surroundings—has become a vital practical problem, affecting the very foundations of humanity. It is also the main problem in the theoretical, particularly the philosophical and sociological, understanding of processes related to the development of science and technology, which, in turn, is largely dependent upon the personal factors determining it. Contemporary science's connection with the human problem, the humanist importance of scientific and technological progress, its orientation on man—this one might say is the underlying theme of the philosophical and sociological problems that today face any doctrine claiming to be the world outlook, the spiritual essence of its era.

Man, his life and work, his development, is the constant object of Marxism-Leninism. Historical materialism does not leave man out of the scope of its theoretical analysis. On the contrary, it sees as its task to reveal the objective conditions and prerequisites which make possible the true flowering of human nature. Marxism-Leninism poses and tackles the problem of man practically and theoretically as an

essential condition of social development and as its *ultimate aim* to be realised in the communist future. For communism, in the words of Marx, is a society, which "together with the greatest development of productive forces of social labour ensures the most comprehensive development of man".¹

Thus, Marxist-Leninist philosophy includes in the concept of social development lofty humanist aims, which are the objective of material production, and of scientific theory, helping to improve the structure of social relations, and of society's culture as a whole. Thanks to these aims, to this social ideal, clearly defined by Marx, the development of society is a process of the formation of human nature, a process of the humanisation of man. Marx wrote that "although at first the development of the capacities of the human species takes place at the cost of the majority of human individuals and even classes, in the end it will destroy this contradiction and coincide with the development of each individual".²

This is the socio-philosophical basis of real (communist) humanism. When Marxism defined the social dimension of man, i. e., the fact that his essence is the sum total of all social relations, it thereby rejected the abstract principles of the preceding humanism, based on the idealist philosophy, whose starting point both in relation to historical concepts and to epistemology, ethics, etc., was the problem of human nature, the universal essence of man as the main, eternal attribute of isolatedly considered individuals. Marxism however does not disclaim the continuity of links with earlier humanism; it imparts real content—the result of scientific analysis, to the former general humanistic ideal, which was abstract and speculative. The Marxist-Leninist concept, based on the materialist view of history and asserting the class approach and regarding man as the product of social development, draws this real content from a new understanding of human practice as object-oriented activity which contains within itself a change in nature, in society and in man himself.

Real (communist) humanism, which is the product of research into the genesis of human society, the motive forces of history, asserts the human ideal as a harmonious union of the social and the biological sides of man's nature. Since it is based on practice, and sees it as the condition of the individual's development communist humanism is effective humanism, regarding man as the subject and object of social forces among which science is playing an increasingly bigger role. The humanist "dimension" of social reality, thus, applies also to science as a specific social institution, the true meaning and purpose of which is revealed in its orientation on man as its ultimate goal.

This coincidence of the humanistic aims of science and social development is regarded by Marxist-Leninist philosophy as a world-outlook and methodological principle, whose realisation, however, is dependent upon historical conditions. It has to contend not only with the insufficient development of these conditions and of science itself,

¹ K. Marx and F. Engels, *Collected Works*, Moscow, Vol. 19, p. 120 (in Russian).

² *Ibid.*, Vol. 26, Part II, p. 123.

but also with the many myths and prejudices, handed down from the early history of scientific cognition, as well as those produced in abundance by contemporary science and by the social conditions of its development.

2. DEHUMANISATION OF SCIENCE AND THE CULT OF MAN

Only half a century ago science was collateral, as it were, to the processes under way in the sphere of material production and consumption, in social relations, art, politics, ideology and mass consciousness. It never touched upon the deep and intimate foundations of human existence and never, accordingly, attracted the attention of the wide public. True, the absence of such attention does not necessarily mean the absence of actual connections of scientific activity with life. But these were revealed but sporadically, and despite the dramatic discoveries that revolutionised production, science remained a force to be admired but not considered in terms of business interests. Scientists continued thus to be perceived by the public in the traditional way, that is, simply as lone heroes whose activity was incomprehensible. Among scientists this still allowed for the "ivory tower" attitude towards their own social position and towards problems with which humanity was concerned.

The situation changed radically after the first atomic device was exploded at Los Alamos, and Hiroshima firmly established the notoriety of contemporary science. It had become evident that even physics was closely connected with politics. From a humble toiler that held no glamour for the public at large, science was turned by the sensation-prone press into an all-powerful "demon of destruction". Many communications from scientific laboratories were featured with criminal news in the bourgeois press.

But the fact that the public did not become aware of science until it heard the atomic blasts, is probably one of the greatest injustices committed in the history of mankind. It was totally out of keeping with the inner logic of scientific development, and the service it rendered in the fierce political struggle turned against science itself. The very purpose of science and its basic, deep processes were distorted and, originally a means of changing nature to serve man, it became in many cases something the very opposite, turning against him the forces it had brought into being.

This started a veritable tirade against science, its "exposure" as a force capable of serving mankind. Human thought at the peak of its concentration in contemporary science collided with its antipode—the deforming stress of class antagonism in social relations, the sphere of false consciousness, alienated from true science and striving to acquire a mass character. It seemed that a social explosion could be the only result. But this did not occur because specialisation in science proved to be much too advanced and its basic forces beyond the reach of the sphere of alienated "mass consciousness" and also because parallel with the phenomena disturbing "mass consciousness" tranquillising factors began to take effect. Not least, if not first, among these

factors was the material wealth, which was directly linked with the successes in science and which considerably increased mass consumption.

These latter tendencies quickly took shape (if not theoretically, then at any rate ideologically), as "technocratic" concepts asserting the omnipotence of science, its "fate-bearing" significance and its universality as a force transforming society immediately and directly, by-passing social factors. By absolutising scientific progress these concepts make man a slave to a force that is alien and hostile to him, and which a kind of elite standing above the main mass of humanity is supposed to control. These concepts are therefore not only anti-democratic, they are also anti-human; they deprive science of its human quality and its ties with man, equally inherent in it *not only as regards the aims but also the means of their achievement*.

The antipode to the technocratic concepts today is obviously the romantic-utopian "criticism of science" which borders on left extremism and at times resorts to apocalyptic prophecies and invocations and makes a negative attitude to science and technology its principle and basis in solving the human problem. It capitalises upon the myth of science's "demoniac" nature, i. e., its ability to threaten humanity and become a hostile force more and more out of control and acting independently. Science and technology are accused of creating what is only a semblance of human power—of making man, in effect, a slave to the Moloch of industry, of ruining the natural environment, of causing the degradation of culture and morals and of threatening to destroy humanity. These accusations usually go hand in hand with the view that all progress in science and technology, regardless of its social conditions, is hostile to the individual and is even a "social counterrevolution". By proclaiming the cult of man and declaring the unalienated "authentic" individual to be the ideal, the partisans of these conceptions are trying to create an impression that there is a way of ensuring the future of humanity and the comprehensive development of the individual other than the rapid progress of science and technology (transforming all spheres of human life) based on communist social relations.

We do not ignore the fact that progress in science and technology today is in many instances one-sided and gives rise to negative features. But we are also aware that they can be overcome in the future only with the help of science and technology. Science and technology *per se* do not give rise to negative features; the latter are engendered by science and technology being inadequately developed, by their deformation, and deviation from the humanistic goal which, in turn, stem from the social factors alien to that goal. The social and class orientation of such concepts as regards man in his relations to contemporary scientific and technological progress is to deflect the problem away from the actual social contradictions and to focus attention on accompanying factors, depicting them as "eternal" and "fatal". Hence the antihumanistic and antiscientific myths widely current and disguised occasionally by references to contemporary science and technology. There is a revival of social-Darwinist, racist

and other such conceptions which maintain that human nature is inherently depraved and that private property instincts, criminality, aggressiveness, and social and class inequality are "genetically predetermined". The press, cinema, television and other media feed the public with an endless stream of the most subtle reactionary utopian theories, which prophesy the end of humanity, allegedly as a result of social, cybernetic and genetic engineering, as the inevitable consequence of biological factors in human nature, uncontrollable in conditions of the breath-taking progress in science and technology. The future is modelled along set patterns and presented as the unavoidable and fatal destiny of the whole of mankind.

3. SCIENCE SERVES MAN: HUMANISTIC CONTENT OF SCIENTIFIC AND TECHNOLOGICAL PROGRESS

In the situation described not only science and technology but paradoxically enough, man himself is in need of protection. However, the point is to work out a positive, a definite programme which determines their essence and development. This can be achieved within the framework of the Marxist-Leninist concept of technico-scientific progress and man as its subject and object. That is why the Marxist-Leninist outlook emerges today as the spiritual basis of this progress, and the affirmation of the dignity of man and the lofty principles of humanism, a humanism visualised in the communist sense of the harmonious fusion of aims and means, noble aspirations and decisive science-based actions.

All this presupposes a broader understanding of science itself as a creative force serving human progress, and as a special *social institution* of contemporary society. In this respect life, man, is above science, and the significance and social value of science are determined by its utility to them. An attempt to present science as some formal "instrument of cognition" to be used for any, even anti-humanistic purposes, is erroneous. This view reduces science to the level of pure "research technique" with various social consequences, and leaves out of account its specific role as a social institution in contemporary society. Its content may be distorted in certain social conditions, or harmoniously revealed in conditions, favouring its development. Marx, the first to indicate the special role of science in an industrial society, saw its adequate realisation in the communist future. Marx considered the progress of science and technology under communism to be organically connected with the establishment of the principles of real humanism, with the free and comprehensive development of man as an end in itself. It is noteworthy that science itself—social and natural—is reorienting the many problems facing it. Priority is being given to those concerning not only the social but also the biological, psychological and genetic factors of man's development. The process is connected with a new phase of the scientific and technological revolution and needs to be viewed in the purely theoretical and scientific aspect, as well as that of world outlook, social philosophy and even ethics.

Contemporary science is developing a new research situation, where man is no longer treated simply as the object or subject in the system of scientific and technological progress but as the dialectic interaction of both. The interdependence and interaction of these two sides of one process—subjective-objective human relations in the progress of science and technology forms a basis on which conception of the problem is transferred, as it were, to a new plane: it is no longer confined to a linear, one-directional analysis of the isolated impact of man (positive or negative) upon the scientific and technological processes, or of the effect of the latter on man. Such an understanding of the interaction between the said processes and man presupposes an active adaptation of the latter in the form of social reactions which lessen or remove some of the negative effects of scientific and technological progress on the biology, mentality and genetics of man and also on his environment; effects that have put mankind on the brink of the so called ecological crisis. The purely emotional attitude towards such phenomena, disguised at times behind antiscientific and in this negative sense so called humanistic terminology, maintains a social approach to them in the form of mere phraseology, deprived of actual content. On the contrary the highest sociality of human adjustment reactions to the processes of scientific and technological progress is expressed in turning towards these very processes with a view to making them more intensive and comprehensive for the benefit of man.

The new technological basis of production has made unprecedentedly great psychophysiological demands on the individual, among them the necessity to process an enormously increased volume of information pertaining also to his other abilities.

In point of fact a new technological environment of life has taken shape, one determining in a new way man's relations with nature. Such changes are at times so great that they may well be assessed as tests of the limits of man's physical and mental capacities, consciousness and will. Only science can help man to cope with these tests. Objective reality itself, consequently, focuses the attention of scientists in all spheres on man and the diverse aspects of his biological nature, in close connection with the social content of his consciousness and activity. Scientific and technological progress is today confronted with the need and the possibility of basically changing the "man-technology" relations so as not only to adapt the machine to man but also to shape his own abilities in keeping with the development of technology.

This is achieved within the framework of engineering psychology and ergonomics, a new science which studies the aptitudes and characteristics of the individual with a view to increasing his work efficiency and at the same time promoting the allround spiritual and physical development of man.

Essentially new possibilities have opened up with the advent of the "biological age", which has not only been proclaimed, but has become a reality through the achievements in molecular biology, genetics (human genetics), biocybernetics and other biological sciences.

4. THE HUMAN PROBLEM IN THE "BIOLOGICAL AGE": POSSIBILITIES AND LIMITATIONS OF MEDICAL AND GENETIC ENGINEERING; WAYS OF CONTROLLING THE ECOLOGICAL CRISIS

The concept "biological age" implies a new stage in the scientific and technological revolution, where the science of living systems, like physics and chemistry formerly, guides and determines the progress in the natural sciences and discovers a series of basically new phenomena. The modelling and reproduction of these in technology (e. g., chemical synthesis in the living cell at normal temperatures, the transmutation of the energy produced in chemical reactions into mechanical work as in the animal muscular tissue) will help, to an increasing extent, radically to transform many branches of industry. The active and direct application in practice of biological research achievements lends impetus to the general process of the conversion of science into a direct productive force of society. This means that production will acquire a biological character thus speeding up and directing it along the lines of large-scale use of chemicals and cybernetic systems.

But in the "biological age" the transforming effect of the technological revolution reaches beyond the sphere of production as such. This is most clearly seen from the practical and theoretical significance acquired by the processes of life directed towards man, his nature and environment. They are the focal point of the main potential in the progress of science and technology in the "biological age". Naturally the degree to and the form in which this potential is being realised is conditioned by social factors. Already today this is apparent in the unprecedented surge in medicine and health service, in the quest for methods of biosphere and biogeocenosis control, and the achievements in the study of laws governing heredity, which will enable man to control life. All this opens up truly fantastic prospects, and today we are just unable to imagine the new world fashioned by man possessing the secret of life and capable not only of maintaining or destroying but of creating it. This new world built on a rational, truly human social basis, will finally overcome, with the help of biological and technical means, the ecological crisis threatening humanity today.

At the biological stage of the scientific and technological revolution when science steadily "switches over" to the human being as research advances from the lower to the higher levels of the organisation of living systems, man's nature will increasingly adapt itself to the environment resulting from this very progress. This may be achieved through preventive heredity control, aimed at combating hereditary diseases, or at easing the burden of pathological mutations.

This line of research and practice, however, involves the solving of a number of fundamental problems. It is necessary to know to what extent interference is permissible into the heredity of man, today and in the future, to know the limits of such interference, and how this will affect the future of humanity and man's genetic diversity. The

fears and protests of progressive scholars against using humanity for irresponsible experiments are understandable, for science must serve humanist ideals and man being the most precious of values must be treated accordingly. Understandable too are the mistrust and the occasionally sharp criticism by Marxist scholars of all sorts of eugenic utopia, mostly springing from the assumption that man is biologically degenerating and maintaining that social and all other problems may be solved through the interference of genetics into his heredity. Reference is not only to the reactionary forms of eugenism, sociologically reflected as racialism, Malthusianism, the "elite theories", but also of its humanistic versions (H. Muller, P. Teilhard de Chardin, and other authors).

The Marxist-Leninist doctrine takes into account the importance of biologic (genetic included) factors and accepts the necessity of research into human heredity. But it stresses that social conditions and prerequisites for man's development are of primary importance, and resolutely opposes all biologisationist tendencies reinforced sometimes with ungrounded references to Marxism-Leninism. Marx justly noted that "birth gives man only individual existence and first of all life as a true individual",³ but "only in society can man develop his intimate nature and the power of his nature must be measured not by the power of separate individuals but by the power of society".⁴

This does not mean that man's biological nature is ideal and that it requires no genetic engineering. But we see eugenics, a science with practical applications, as a thing of the future, and a very distant one, discernible only as the concluding stage of the "biological age" and necessarily depending on the attainment of social homogeneity of the world. Theoretically, it is conceivable as a science of a special, higher order, but at the present scientific level, the complexity of taking into account and correlating an infinite amount of information makes it improbable. It is also undesirable because of the dangers for the future of mankind in the insufficient knowledge of genetics and the hazards of their application in conditions of a split world. Only major discoveries in this field and radical changes in the social conditions can make the science concerning progressively increasing changes in human heredity (called eugenics or otherwise) probable practically. And it will be wise and humane people who will concern themselves with this science, who will identify the unknown forms of the changing impact of science upon the biological nature of man.

Today we know the possibilities of science and its limits, which either expand or diminish chiefly in conformity with the social factors. Human development is not only effected in the sphere of thought and activity, it also develops this thought and activity, channelling them along the path of humanism, democracy, progress, which we see as one in the general communist perspective.

The factors determining the humanistic import of scientific and technological progress, and forming the content of science as a social

³ K. Marx and F. Engels, *Collected Works*, Vol. I, p. 342 (in Russian).

⁴ *Ibid.*, p. 146.

institution, are steadily gaining in importance and can no longer be separated, without detriment to science and humanity from the process of "pure" cognition. This is especially true in the new stage of the scientific and technological revolution when man himself, in the unity of the biological and the social sides of his nature, is becoming the object of science. Hence the importance attached to socio-philosophical, world-outlook and ethical problems of scientific cognition, which will grow with the progress of science and technology in the "biological age".

This concerns not only problems connected with human genetics and with everything related to experimenting on man, which is growing in risk and in volume and can no longer be dealt with by purely ethical regulation but requires strict and differentiated legal and legislative control on a national and world scale. It is not accidental that many scholars believe that here we will find ourselves confronted with moral, ethical, psychological and political problems, compared to which those occupying the minds of nuclear scientists will look like child's play. These are: the total danger for the individual and for humanity of biological arms, of psychopharmacological drugs (which in addition raises the difficult problem of "the nature of the individual"), and finally the transplantation of vital organs, giving rise to new, more complicated problems.

We must be ready to answer these questions in keeping with the humanist spirit of science, our philosophy and moral code. We know that they might substantially change in the future, but we also know how tragic for humanity is their betrayal today.

5. SCIENTIFIC COGNITION AND HUMANIST IDEALS: THE FALSITY OF THE SCIENTISM-ANTHROPOLOGISM DILEMMA AND THE NEED FOR A SINGLE SCIENCE OF MAN

The answer to the questions listed above can only be found in the fusion of science and humanism, producing a humanised science with man included in its basic principles and ultimate goals, and a scientific humanism which investigates man and his development in close connection with social reality. The falsity of the scientism-anthropologism dilemma, which dates back to the birth of European science and still exists, becomes more obvious against this background.

But on the road to this goal the entire complex of processes in scientific development, characteristic of the "biological age", has to undergo substantial changes. It has to pass through the stage of intensive development in sociology before it can enter, enriched, into the "age of anthropology"—the science of man and for man, which will overcome the existing dualism in the methods of natural science and sociology and will take into account both the biologic and the social nature of man. We have in mind anthropology in the wide sense of the word, including its philosophical and sociological aspects, and not "philosophical anthropology" as opposed to individual sciences. Philosophy and sociology are only of value when closely connected with medical, genetic, psycho-physiologic, demographic, ethical and

other research, as part of the general science of man, with no claims to a special position in the "hierarchy". This was foreseen by Marx, who considered the ideal situation when "natural science includes the science of man in the same measure as the science of man includes natural science and they become one".⁵

Such an integrated science of man postulated as an ideal and a realistic prospect can be used as a guiding principle in our reflections on the current problems of research in connection with the scientific and technological revolution. These problems call for an integrated scientific approach, better cooperation between the different sciences studying man, which should include not only the social sciences such as philosophy, sociology, ethics, aesthetics, pedagogics, but also research in medicine, physiology, genetics, psychology and other fields.

It is this concentration of scientific interest and effort, and of scientific and technological progress on the human problem that distinctly reveals its humanist contents and true mission as a force serving the welfare of man and humanity. It is this concentration that holds the solution to the urgent problems facing humanity—that of combining research with a humanistic approach, of the commitment of science to humanistic ideals, and it is on this basis that the concept of real, communist humanism in its relation to modern science is evolving.

⁵ K. Marx and F. Engels, *Earlier Works*, Moscow, 1956, p. 596 (in Russian).

Psychological Compatibility in Interplanetary Flight

Astronautics, having emerged as the highest synthesis of the latest advances in science, technology and production, has, in turn, opened up virtually unlimited prospects for rapid scientific and technological progress. We are witness to a process of cosmonautics, the primary directions of which are seen in the utilisation in the economy of scientific discoveries made during flights of automatic devices and man in space, and also in many scientific and technological achievements that have become possible due to the development of modern space rocket technology.

No branch of science and technology has ever developed as rapidly as astronautics. In the time span between the launching of the first artificial earth satellite on October 4, 1957 and the present, so many complex problems have been solved that it will be possible in the very near future to make a qualitative leap in space exploration.

A symposium held in March 1966 in the United States examined the problems of forecasting space activities for the next 35 years. In the last 6 years these prognoses have been substantially refined, and at the present time the space exploration prospects for the coming two decades are in sharper focus.

Between 1975 and 1985, heavy manned orbital stations will be circling the Earth on a permanent basis. Each such station will be a complex of individual modules, capsules and laboratories, and will provide facilities not only for scientific research, but also for in-orbit docking of spacecraft, their assembly, inspection, fuelling, repairs and take-offs into outer space.

Krafft A. Ehrlicke predicts that between 1982 and 1985 a permanent laboratory will be set up on the Moon. Extensive exploration of the lunar surface is anticipated in the 1970s, the results of which are necessary before a flight to Mars can be accomplished. American experts expect to see an interplanetary flight with a landing on Mars take place in the middle or the end of the 1980s.¹

Man's age-old dream of interplanetary flights has now moved from the realm of science-fiction to the drafting tables of designers and the laboratories of scientists. It is being realised, so far, in blueprints, calculations and in numerous experiments being carried out in space and on Earth.

¹ See reports by William G. Purdy and Krafft A. Ehrlicke in *Space Age in Fiscal Year 2001*, Edited by Eugene B. Konecni et al., Proceedings of the Fourth AAS Coddard Memorial Symposium, March 15-16, 1966, Washington D. C.; Mitchell R. Sharpe, *Living in Space. The Astronaut and His Environment*, New York, 1969.

It is common knowledge that the achievements of astronautics are already being used in organising long and superlong range radio and television transmission, and in conducting meteorological, geological, geophysical, astronomical, physical and many other kinds of research. However, the information we receive with the help of systematically launched laboratories is fundamentally limited. This is due, above all, to the fact that automatic devices are capable of giving information only within the framework of the programmes devised for them by man. If an automatic device runs into some phenomenon not envisaged in the programme, it cannot relay any information whatever about it. And there are many objects, phenomena and processes in space about which science still knows little or nothing at all. That is why, when it comes to exploring the planets of the solar system, man must play a direct part in it.

The first manned space flight, accomplished by Yuri Gagarin, lasted only 98 minutes. A flight to Mars, following a trajectory with a minimal expenditure of energy, will take 259 days. Then the cosmonauts will have to spend 450 days on the planet, awaiting the favourable opportunity for the return flight. The total time required for the round trip will be 968 days (two years and 8 months). If the transplanetary injection velocity is increased, the time required for the expedition will be substantially reduced, but it will still be great (about 400 days).

All this raises many problems for science and technology, one being the problem of harmonious teamwork by the crew in controlling the spacecraft and its systems, as well as the problem of having a group of people restricted to the limited area of the spaceship compartments during the interplanetary flight. The first report on experimental observations of a group of cosmonauts was made by Soviet researchers F. Gorbov and M. Novikov. Our task here is to summarise the material on relations between people involved in joint control of a spacecraft and on interpersonal relations that develop when there is no opportunity for broad and varied contacts with other people. With this aim in mind, an analysis was made of space flights of up to a month in duration, involving crews made up of several persons; interpersonal relations developing within small groups working in isolated situations (scientific expeditions, polar stations); and data on experiments in which prolonged space flights have been simulated. We are perfectly aware that the results of these observations and studies cannot be applied mechanically to the relations that will develop among crew members in interplanetary flight. No doubt, certain new phenomena, of which we may not have the slightest idea at the present time, will be revealed in actual practice. But we hope that the problem of the psychological compatibility of spacecrews in interplanetary flight will draw the attention of a broad circle of philosophers, sociologists, psychologists, psychoneurologists and other specialists, and be solved through their joint efforts.

Leadership and subordination in joint spacecraft control. During the flights of the Vostok and Mercury spacecraft, the cosmonaut in the "man-spacecraft" system carried out the piloting, navigational,

radio-communications and other functions by himself. The manned interplanetary ship and its equipment will be a complex, multi-profile system, the operation of which will require a crew of several men. On an interplanetary spaceship, the functions of craft and systems control will be divided up among the commander, navigator, flight engineer (or engineers), radio operator, etc. This kind of specialisation was already in the making in the Voskhod, Soyuz and Apollo spacecraft (commander, flight engineer, research engineer or co-pilot).

Specialisation and the distribution of functions among the crew members provides for greater equipment handling proficiency, but at the same time requires coordination of the duties assigned to the individuals involved. More is needed than for all the members of the crew to have a correct general understanding of the task at hand and for each member to be an expert in his field. There also has to be a highly refined kind of teamwork between the commander and his subordinates.

Leadership in small groups refers to the activity of a person leading a group towards a specific objective and interacting with the other members of the group. Leadership in small groups, in aviation and astronautics in particular, has its own specific character, in comparison with leadership in large groups. It consists of the fact that the commander takes a direct part in operating the spacecraft, while simultaneously directing the work of the other members of the crew. It happens quite often that this activity goes on against a background of great emotional tension.

When Voskhod-2 was preparing to land, it so happened that one of the auto-engagement commands did not get through, and the crew were given permission to effect recovery from orbit by manual control. In controlling this manoeuvre, the spaceship commander had to work without a letup at a rate dictated by external circumstances (changing stages of flight) that were essentially irreversible. Within a strictly limited span of time, the cosmonaut had to make a spacecraft orientation and, at the precisely calculated moment, ignite the retro-rocket. An error in orientation at the time of retro-rocket ignition would have sent the ship into another orbit, from which it might not have returned to Earth in time (life support systems have a limited service life). Even in the event of an accurate but prolonged orientation there was the danger of landing in an unfavourable location (mountains, taiga, the ocean, desert, etc.). Having analysed the situation, Commander P. Belyayev oriented the spacecraft and, at the precise moment, ignited the retro-rocket. In carrying out the manoeuvre, he acted coolly and confidently, all the while giving precise commands to A. Leonov, who took observations through the window, checked the instrument readings and assisted in making the orientation for the touchdown.

A strict sequence of operations according to a definite programme is also required of cosmonauts accomplishing a lunar landing. This manoeuvre must also be made within a rigid and narrow time limit, which places the cosmonauts under considerable emotional stress. They have only 75 seconds in which to select the landing site, orient

the lunar module, fire the propulsion engine, gradually reduce the thrust and cut it off just above the lunar surface in order to make a soft landing. Neil Armstrong saw that the Apollo-2 lunar module was heading straight for some rocks. Taking over the manual controls, he accomplished a manoeuvre to land safely in a small area free of lunar rocks.

As we can see from the above examples, the spacecraft commander must be able to assess the situation, make the proper decisions and execute them, all with split-second timing.

The performance of the entire crew must be coordinated through continuous communication in two directions: from the commander to his subordinates and vice versa. To achieve the necessary teamwork more is required than for the commander to be bold, decisive, capable of making a rapid assessment and of making decisions in unexpected situations; he also must possess the ability to unite the crew into a single whole; he must know how to lead and guide people. The others in the group must not only be able to rapidly assess the situation, but also to "anticipate" the probable actions of the leader and always be ready to back him up. The leader and his followers are like a conductor and musicians in an orchestra.

In assigning the roles to be played, account must be taken both of the character traits of the people involved and the tasks that are set before the group. A high level of coordination and teamwork was required, for example, of the crew of the Voskhod-2 spaceship in carrying out the tasks of man's first spacewalk. When the responsibilities were being divided up among the crew, account was taken not only of the professional training of the cosmonauts, but of their individual psychological traits as well.

Role distribution is also an important factor in spacecraft docking operations. This is how V. Shatalov, who had acted as the leader, described the docking of Soyuz-4 and Soyuz-5. "As we operated our ships, we maintained their mutual orientation. I adjusted the rendezvous velocity depending on the distance between the ships... we approached each other to a distance of about 40 metres, whereupon we began hovering. At this distance, Boris Volynov and I executed several manoeuvres in which a series of changes in the mutual position of the spaceships were made as we photographed each other.... To avoid a jolting impact the relative rendezvous velocity was reduced to a few dozens of centimetres per second at the moment of contact."²

Similar manoeuvres will be executed by interplanetary spaceship crews. In reaching, say, Mars, the command ship will go into orbit around the planet and detach a manned descent module, which will make the landing on the surface of Mars. When the exploratory programme is completed, the descent module will take off from Mars and meet the command ship in orbit.

All this points to the need for a high degree of coordination in the activity of the crew members in controlling interplanetary spacecraft.

² *Four in Orbit*, Moscow, 1969, p. 342 (in Russian).

Since it has been high in all space flights already accomplished, one may ask whether there is any need to examine the question further.

It has been observed, however, that in aviation practice and in other kinds of joint work, coordinated activity is not always at the highest level. When it is not, the crew as a rule fails to cope with the assigned tasks, and it often happens that interpersonal conflicts arise.

It may seem at first glance that non-coordination in work stems from a lack of friendly ties (an important factor, to be discussed below), from inadequate mutual respect or from mutual animosity. A deeper analysis, however, usually reveals other causative factors, such as the inability to understand each other in crucial situations, non-synchronised psychomotor reactions, differences in attention, thinking and other innate and acquired traits.

F. Gorbov cites observations made of the actions of two flyers, one of whom (the commander) was relatively sluggish, with somewhat "lagging" judgement and reactions, while his assistant was quicker and more decisive. A conflict situation arose when, under emergency conditions, the junior officer began to interfere in the operation and tried to impose his line of conduct.³

Experimental modelling of group activity. In the process of carrying out group activity in operating a flight vehicle, the leader directs the efforts of his crew at a rate and rhythm dictated by the space-time dynamics of a given manoeuvre and the conditions of the external situation. The actions of any one member of the group will evoke, either immediately or after a certain lapse of time, reciprocal actions on the part of the others. "In other words," writes M. Novikov, "this action will not only pertain to the specific goal of the influences being exerted, but will also evoke purposeful responses on the part of the partners, which will conform to this 'perturbation'. Thus, within the dynamic system, which the group is, there will emerge oscillatory processes of attenuating amplitude (if all the influences are adequately summed up or parried), leading to an equilibration of the processes at some minimal level. If the influences are improperly controlled, then the amplitude of the oscillatory processes may not attenuate or may even increase, ultimately leading to a break-down in the system and cessation of activity."

Novikov concludes from the above that the efficiency of purposeful interdependency is inversely proportional to the amplitude of the oscillatory processes, and, consequently, efficiency, as a function of these processes, is determined by the level of the equilibrium established. "Therefore, a functionally efficient group must be characterised as an ultra-static system with homeostatic adaptation features (the principle of homeostatic equilibrium)."⁴

In working out a methodological procedure for studying group activity, Professor Gorbov and his colleagues proceeded from the

³ See F. D. Gorbov, "Experimental Group Psychology", in *Problemy inzhenernoi psikhologii*, No. 4, Leningrad, 1966, p. 256.

⁴ M. A. Novikov, "The Psychophysiology of Group Sports Activity", *Psychological Preparation of Athletes in Various Kinds of Sports for Competitions*, Moscow, 1968, pp. 107-108 (in Russian).

following requirements: (a) the group activity model must be simple, so that it will not require preliminary training in specific skills, otherwise the subject will not have equal conditions; (b) the activity must be interdependent, that is, the model must provide for cross connections between the operators; (c) the activity must be dosed according to the difficulty of the group tasks presented; (d) the activity and its results must be objectivised (that is, provisions should be made for recording the process of fulfilling the experimental tasks).

A so called "homeostatic method" was developed on the basis of these requirements. The homeostat consisted of three or more consoles (depending on the number of subjects to be examined), and each subject's task was to set the indicator needle of his console at zero. Each subject received information from his own indicator, but could influence it only indirectly, through influence on the indicators of his group partners. The experimenter could vary the difficulty of the tasks from his control panel. The movements of all the knobs and all the indicator needles were recorded on an oscillograph, so that not only the actions of the group as a whole, but the tactics of each of its members, could be traced.

Experimentation showed that complex homeostatic tasks could not be fulfilled unless one of the operators changed his tactic. This meant that he had to deviate from the "natural" tactic (always moving his needle to the required position) and begin acting against his own interests, as it were (by not correcting the declination error of his indicator needle and even increasing the displacement). An operator who adopted this approach was, in these experiments, conditionally designated as the "leader". He did not strive to set his needle at zero immediately, as he did in the easier tasks, but either waited until it began moving in the right direction due to the activity of the other operators, or, as was the case with the more active and purposeful of the subjects, deliberately moved his needle away from zero, despite the temporary loss, if that was how it tended to move "spontaneously". An operator following this tactic gradually reduced the amplitude of the oscillating movements, thereby bringing the entire system into equilibrium at the prescribed level.

It frequently happens that a "struggle" to take the control initiative emerged between two or more operators. The winner in such a struggle is the subject who can best analyse the incoming information and most quickly summarise and forecast the possible actions of his partners and optimally influence them.

Experiments of this nature have thrown considerable light on the functions of the group leader, not only as the "sharpest" member of the experimental group, a person possessing such characteristics as endurance and the ability to make a rapid and adequate assessment of the situation, but also as one who is capable of accurately and purposefully coordinating the actions of the group as a whole. These studies have also established that the efficiency of the group cannot be predicted from the results of individual psychological tests outside the group. Individual psychological profiles do not provide sufficient basis for predicting the behaviour of individuals when they enter a

new group, to say nothing of forecasting the efficiency of the group activity as a whole.

Conflict situations are likely to develop as a group tackles the experimental tasks on the homeostat. We cite here one of Novikov's observations as an illustration.

Subject A made a bid for the role of leader. He failed, however, to select the proper tactic. His whole approach was primitive and inflexible. He displayed intolerance towards the others. Despite instructions forbidding conversation among the subjects, he lectured and criticised a partner who was working rather actively, but who was slower than he. He was nervous, shook his head in annoyance, and at times twisted his control knob sharply and maliciously to the right and left, causing illogical deflections on all indicators and confusing his partners. In the course of the work he performed pointless actions, apparently caused by vexation. In such situations, all the subjects displayed neurotic reactions, accompanied by changes in pulse, breathing and other physiological indicators.

A clear-cut correlation is observed when the data from experiments by Soviet researchers are compared with the results of joint activity under natural conditions (sports teams, airplane crews, etc.). Naturally, in selecting the first crews for the multi-man Voskhod and Soyuz spaceships, use was made of certain methods from experimental psychology, as well as the theory of the problem being elaborated in the psychology of small groups. Needless to say, the matter went further than experimental psychological examinations. Methodologists, psychologists and trainers carefully observed the crews' coordination in activity as the candidates went through exercises in training ships, as well as during their joint athletic training, academic studies and recreation.

But the problem of compatibility is not confined to questions of harmony in operating the spaceship and its systems. If we call the aspect having to do with operating the vehicle "coordinated activity", then the aspect having to do with the crew's living in group isolation on board an interplanetary ship may be called "psychological compatibility". The two aspects have much in common, but at the same time each has its own specific features, enabling us to discuss them separately.

Psychological compatibility in space flights of medium duration. The eighteen-day flight of A. Nikolayev and V. Sevastyanov on Soyuz-9 marked a transition from relatively short manned space flights to flights of medium duration, in which the question of the crew's psychological compatibility begins to assume particular importance.

Before making an analysis of the interpersonal relations that developed on board Soyuz-9, we should, perhaps, give at least a brief psychological description of each member of the crew.

The ship's commander, A. Nikolayev, was classified as a phlegmatic in terms of his temperament type. He worked calmly and unhurriedly during the training sessions. His processes of excitation and inhibition being strong and relatively low in mobility, he elaborated

new skills relatively slowly. In the early stages of training he made errors, but they steadily decreased. His work during training was characterised by deliberateness, high concentration, carefulness, great emotional restraint, and clear objective reports.

V. Sevastyanov was classified as a choleric with respect to temperament type. In the training ship he worked with initiative and displayed lively and emotional reactions to the situation. He always spotted his own errors and corrected them, rapidly mastering the new skills. His reports were vivid and lively. The high mobility of his nervous processes helped him to switch his attention easily and to grasp anything new very quickly.

Despite the difference between Nikolayev and Sevastyanov in both temperament and character, their common goal in fulfilling a responsible task brought them so close together that they began to react identically to certain things. Nikolayev's deliberate manner, heavy concentration and emotional restraint fit in well with, and were supplemented by, Sevastyanov's fervour, impetuosity, keenness of observation and quick reactions. The relationship between the two throughout their training and during the flight was characterised by mutual tact, compliance, attentiveness and concern.

After the flight, Nikolayev was asked the following question: "For 18 days you and Sevastyanov were alone in restricted quarters far from Earth. What were the results of the flight from the standpoint of psychological compatibility? Did the differences in your personalities affect your relationship?"

In reply, Nikolayev said: "Our psychological compatibility was good. We trained together for a long time here on Earth. We are old friends. We tackled every problem together, helped each other with advice and in conducting experiments. If one of us was carrying out an experiment, the other would not just sit back and do nothing. I think that, on the contrary, our personality differences helped. If he were as quiet as I, we might never have uttered a word the whole flight through. But he is more talkative."⁵

The old saying to the effect that we seek in others what we lack in ourselves finds a certain measure of confirmation in another space flight, that of V. Shatalov and A. Elisyev. Although they did not make a flight of medium duration, they did take part in three flights of varying complexity, and this deserves the attention of space psychologists dealing with the question of group compatibility. Characteristic of Shatalov are his ability to make an instantaneous appraisal of the situation and to achieve set goals. His friends say in jest that his brain works like an electronic computer. The speed of his psychic processes is reflected to a certain extent in his speech; he speaks clearly and quite rapidly, giving the impression that his thoughts run well ahead of his words. He is sincere and direct and, at the same time, knows how to avoid offending a person in an argument, convincing the latter, rather, by the logic of his reasoning. He has a great gift for attracting people.

⁵ *Altaiskaya pravda*, July 12, 1970.

Eliseyev gives the outward impression of being a phlegmatic. His speech is unhurried; he speaks as if weighing every word. But appearances of a phlegmatic temperament notwithstanding, he is a Master of Sport in fencing, capable of lightning reactions to his opponent's thrusts. And this reaction speed shows up both in sports and in his professional activity.

During the flight of Soyuz-5, the emergency horn suddenly sounded, and the instruments showed that the back-up power supply system was switched on. The procedure was that if the primary power supply system were to fail, the crew would have to prepare for re-entry, thus calling off the docking operation. However, Eliseyev quickly determined by indirect indications that the back-up system had switched on accidentally, and this "diagnosis" made it possible to carry out the docking as scheduled.

The flight of G. Dobrovolsky, V. Volkov and V. Patsayev in the orbital station Salyut lasted 24 days, throughout which time the crew worked in excellent harmony gathering valuable material of great scientific and practical significance for subsequent space exploration.

So far, no manned space flight has lasted for more than a month, while an interplanetary flight will require many, many months. Though we have as yet no direct experience with small groups living and working in space for such long periods, we can get some idea, albeit remote, of the possible interpersonal relations that can develop in such a situation from observations of groups living in isolated circumstances on Earth.

Interpersonal relations in small groups in situational isolation. From accounts of scientific and alpine expeditions or from the lives of people whom fate had thrust into tragic situations, one can find numerous examples demonstrating that in the face of hardship and danger small groups may unite even more closely and the people in them may retain their sense of cordiality, mutual assistance and self-sacrifice for the sake of saving their companions. We cite a few such examples as illustrations.

A five-man polar expedition, led by Robert Falcon Scott (the other members were Dr. E. A. Wilson, Petty Officer Edgar Evans, Lieut. H. R. Bowers and Capt. L. E. G. Oates), reached the South pole on January 18, 1912, only to find that Norwegian explorer Roald Amundsen's expedition had preceded them. On the return journey, Captain Oates's feet were frostbitten, but for two weeks after he was stricken he continued on. Realising that his days were numbered and that he was becoming a burden to the group, Oates asked Scott to leave him behind in his sleeping bag. Scott and the others categorically refused the request. "Either we all get back together, or we perish," was Scott's reply. Then Oates, after waiting until the others were asleep, walked out of their tent into a blizzard, hoping, by his sacrifice, to facilitate his companions' return.

In 1937, a four-man party, headed by I. D. Papanin, lived and worked in perfect harmony for nine months on a drifting ice-floe, manning the polar station, North Pole-1. The comradely cohesion of the six men in Thor Heyerdahl's Kon-Tiki expedition helped them

through extremely complicated, and sometimes tragic, circumstances. And in 1960, the world marvelled at the courage and unity of a group of Soviet soldiers under the command of Sgt. Ziganshin, who drifted several weeks in an unnavigable barge in the Pacific.

However, the history of scientific expeditions also knows of cases where animosity, hostility and conflicts have arisen between people in circumstances of group isolation. Here is how Hermann Heinz Wille describes the atmosphere on board a small ship, the *Belgica*, which in 1898, carried an expedition, led by Gerlache de Gomery, to the shores of the Antarctic, where it had to spend the winter. "March 21—when it is the first day of spring in Europe, the sun sinks beyond the horizon in the Antarctic. The night, which will last for 186 days, has buried the *Belgica* in silence, darkness and oblivion.... All communication with the outside world, with civilization, has ceased. The 18 persons on board the ship are doing everything possible to create tolerable conditions for the winter's stay. But nothing good comes of it. In the smoky cabins, weakly illuminated by the flickering light of kerosene lamps, discontent, depression and irritability have taken up quarters, depriving the people of mutual trust and poisoning the atmosphere. In other words, 'expeditionary madness' has found a haven here—a disease about which nothing is written in the medical books."⁶

Much the same situation developed among the members of a 10-man expedition, led by the Norwegian explorer, Carsten Eggeberg Borchgrevink, when they wintered in a small house on the Antarctic Continent in 1899. "The most trifling and ridiculous causes," writes Hermann Wille, "easily evoke suspicion, discontent and arguments. The dogs, too, who have been left to themselves and day after day rush about in the snow, are afflicted with polar madness. They attack each other and are continuously snarling. The weaker ones perish. Their incessant howling and barking wear on the nerves. The people, even the most even-tempered, become more and more irritable—to the verge of madness."⁷

It may be said that scientific exploratory expeditions that work for long periods of time in geographical isolation come close, in a number of features, to prolonged space flights. However, even these observations cannot satisfy the requirements of astronautics. That is why experiments are currently being conducted in pressurised chambers which simulate the conditions of space flights of long duration.

Experimental simulation of interpersonal relations in interplanetary flight. In 1964, A. Lebedinsky and his co-authors published data on an experiment in which three men spent 120 days in a sealed chamber. In the course of the experiment, definite alterations in the nervous and psychological condition of the subjects were noted. These changes amounted to, heightened irritability, which led, more often than in a normal situation, to conflicts between the subjects. The experiment

⁶ Hermann Heinz Wille, *Im Banne des Weissen Magneten*, Verlag Neues Leben, Berlin, 1962.

⁷ Ibid.

was completed successfully because, in the authors' opinion, such positive stimulæ were operating as the subjects' clear understanding of the objectives and tasks of the experiment, the sense of responsibility for the assignment and their sense of teamwork. "It was also important," the authors write, "that most of the time the subjects were engaged in some kind of definite beneficial work. This not only helped to smooth out the noted deviations, but to a certain degree controlled the development of unfavourable reactions."⁸

Another experiment was conducted in 1966, in which three men—a doctor (the group leader), an engineer and a radio correspondent, unacquainted with each other prior to the experiment—lived and worked for 70 days in a 10-cubic metre sealed chamber. In the course of the experiment a clear case of psychological incompatibility between the doctor and the engineer was observed. Conflicts between the two occurred periodically. The programme was completed, but the subjects remarked that this psychological incompatibility affected the mood of all the members of the crew. The following entry made by the radio correspondent in his diary gives an idea of the "emotional climate": "Work, eat, medical examination, sleep. Our life took on a kind of feverish, yet monotonous, rhythm. There was almost no free time. We told ourselves that this was good, that keeping busy chased away boredom, but.... But Stas became noticeably thinner, his face became covered with bristles, and circles appeared under his eyes. Lyonya's eyes became red. As for me, I felt more and more as if some kind of caustic vapour was creeping into the tiny room, and was poisoning us, making us intolerant of each other. Insignificant details of behaviour, little mannerisms, began to acquire unbelievably exaggerated importance.... The usual tone of friendliness and good will disappeared, and misunderstandings broke out that looked more and more like quarrels. And all over trifles."⁹

In yet another experiment, two subjects, both doctors—S. Kukishev (44 years) and E. Gavrikov (25 years)—spent 45 days in a sealed chamber. Excerpts from their diaries, published in the December 30, 1967 issue of the newspaper, *Komsomolskaya pravda*, provide some insight into their relationship.

Sixteenth day. Gavrikov: "One third of the experiment is over. A brief summary can be made. The first five days were the hardest, until we got acquainted with each other, with the chamber and the things around us, and until we got used to the idea that there was no getting away from all this for 45 days.

Nineteenth day. Kukishev: "So far, we have few interests in common: work, reading, the diary and... silence."

Twentieth day. Gavrikov: "There is very little communication between us, even less than necessary, but, I think, neither of us feels offended by it."

Twenty-fourth day. Gavrikov: "Our relationship is interesting. I

⁸ *Aviatsia i kosmonavtika*, 1964, No. 11, p. 30.

⁹ E. Tereshchenko, "Five Hundred Watches, or Trial by Isolation", *Znaniye-sila*, 1968, No. 5, p. 12.

still can't understand it. Sometimes he annoys me. This came out especially in the beginning..."

Twenty-fourth day. Kukishev: "On the fifth day he tortured me so much with his moaning and groaning, his yawning, his pretended—or so it seemed to me—apathy and deliberate negative thinking, that I found it very hard not to betray my state of mind by word, tone of voice and gesture, by my behaviour and attitude. The diary came to the rescue. Were it not for this outlet for all the feelings of the day and the moment, a single uncontrolled remark could have led to dire consequences."

Twenty-fifth day. Gavrikov: "We talk little. It seems that we don't hit it off with each other personally, but we have achieved harmony in work. In this kind of a situation at home I would have lost my temper long ago!... I don't want any quarrels aboard our ark..."

Thirtieth day. Gavrikov: "Generally speaking, I still don't quite understand our relations. Today, I was thinking that they somehow resemble the relations of two Robinson Crusoes after a reconciliation. As a rule, we don't argue. We do not engage in superfluous conversation. In fact, we talk little. Maybe we have different interests, and then the age difference between us has an effect. But I would agree to sit through another month with him without hesitation. We already know just what concessions each must make to the other to make life normal and allow us to work constructively. We haven't had a single conflict."

November 5, 1967, marked the beginning of a year-long ground experiment involving an extensive programme of studies in human life support during prolonged space flight. The subjects were G. Manovtsev, a doctor (the leader of the group), A. Bozhko, a biologist, and B. Ulybyshev, a technician. Prior to the experiment, the group went through tests for psychological compatibility. After the experiment, the newspaper, *Meditinskaya gazeta*, commented in its December 27, 1968 issue: "Of course, as in any group working together for a long period of time, there were some disagreements. There were arguments about such things as how better to carry out this or that investigation, what methods would be most effective in the assigned programme, or what was the most important thing at a given stage. But all these controversies were of a strictly businesslike nature, although they were sometimes a little more emotional than under normal conditions. On the whole, a definitely optimistic conclusion can be drawn: the barrier of psychological incompatibility is not insurmountable even during such a prolonged stay in sealed chamber conditions."

When asked by a journalist, "What advice would your group give to people who might find themselves in similar circumstances in space, on another planet or on Earth?" A. Bozhko replied: "Serious selection are already available, but there are also many unresolved problems. It is not ruled out that a people failure, rather than an equipment failure, will occur, unless the selection of personnel is just right. It would be a good idea for them to live together for a time to get used to each other. We went through this ourselves and know that

it is not always easy." Manovtsev added: "They should also arm themselves with great patience, tact and pliancy. I think that they should avoid any games, even chess. They can cause the situation to become strained."

Many aspects of prolonged space flights are imitated in the sealed chamber experiments. But some factors simply cannot be reproduced here on Earth. This refers above all to the emotional tension caused by the possibility of an unsuccessful outcome. The fact is that every space flight is still experimental in nature, and no one can guarantee 100 per cent success. There is always the possibility of colliding with a meteorite, of various kinds of trouble arising, or of one or more of the ship's systems failing. As we know, the intrepid cosmonaut, V. Komarov, perished because the parachute system of Soyuz-1 failed. G. Dobrovolsky, V. Volkov and V. Patsayev died on their return to Earth from the orbital station Salut-1. And three American astronauts—Grissom, White and Chaffy—perished during a fire in the cabin of their Apollo-1 spaceship.

During the first interplanetary flights, in view of their long duration and considerably greater velocities, this danger will naturally increase. In the sealed chamber tests, however, every member of the crew knows that he can stop the experiment at any moment if complications develop.

In conclusion, we may make a brief summary. In the first place, the problem of teamwork in the joint operation of flight vehicles has been worked out rather fully, but the same cannot be said of the aspect of psychological compatibility. In this area, we are only beginning to ascertain some of the causes giving rise to conflict situations and interpersonal non-unity. Without going into the question of antagonism that stems from class contradictions, from diametrically opposite social views and values, etc., we can state that one of the reasons for the emergence of conflict situations in conditions of prolonged group isolation is emotional tension. Many researchers working in the field of space biology and psychology feel that in the course of interplanetary flight the cosmonauts may develop a feeling of apprehension, alarm and tension. The experience gained in orbital flights confirms this assumption. Indeed, cosmonauts experience not only positive emotions while in flight, but also emotional tension. This is how A. Nikolayev described his feelings when he made his first re-entry from space: "It is a very interesting phenomenon when the ship begins to burn as it enters the dense atmosphere layers. You can see the flames through the windows and hear the crackling sounds, and you wonder whether a piece of the ship's coating may not fly off. But I know the construction of the ship, and I shouldn't have any such doubts. I tell myself: 'Take it easy, let it burn, it's a perfectly normal re-entry'.¹⁰

This, of course, is testimony to the cosmonaut's great self-control. But here we have one of those situations that require a determined

¹⁰ See Y. Gagarin, V. Lebedev, *Psychology and Space*, Moscow, 1968, p. 113 (in Russian).

effort to suppress a natural fear response and to correctly assess what is going on. If the person involved is unable to overcome his fear, he may lose his head, panic, and fail to fulfill his assigned tasks. Numerous observations have confirmed that the feeling of danger can either unite a group or disrupt its unity. It was apparently on the basis of such observations that the famous French navigator, Eric de Bishop, came to the conclusion that group isolation can be successfully tolerated as long as the members of the group are not overcome by a fear for their lives. That is why one of the problems of space exploration has to do with the psychological preparedness of the cosmonauts.

It has now been definitely proved that a monotonous situation is, in itself, stressful. When Bishop sailed the ocean on a raft with a small group (five men), he fought against emotional breakdowns due to the monotonous conditions by making everyone work so that there would not be a single unoccupied minute on the raft and boredom would not have a chance to set in.

Research is currently being conducted to find ways of eliminating the effects of sensory deprivation that will be experienced by cosmonauts on prolonged flights. From observations of groups in wintering conditions and from experiments on group isolation, it may also be concluded that when people have to remain in cramped quarters and have no opportunity to leave, even for a short time, to be by themselves, this, too, is stressful, leading to the development of conflicts. This has also found confirmation in space practice.

The American astronauts flying the Apollo spaceships complained about the poor conditions for rest in flight. They had trouble sleeping not only because of the noise of the equipment, but also because of the talking going on between Earth and the non-sleeping astronauts in the same compartment. All this had its effect on their capacity for work and on the relations between the crew members, as well as between the astronauts and the personnel at command headquarters on Earth. For example, towards the end of the Apollo-7 flight, the astronauts began to display signs of irritability and impatience. They began to argue not only among themselves, but with the command station operators. In talking to Earth, Comdr. Schirra mentioned the three astronauts who were burned to death on the Appollo-1 space-physiological sensors. They even refused to discuss the incident with flight control.

In developing the Soyuz spaceships and the Salut orbital station, Soviet designers took great care to provide good conditions for the cosmonauts' work and rest. As we know, these have separate compartments for work and for rest and sleep. But even greater demands will naturally be placed upon the designers of interplanetary ships.

The space of a single article does not permit a discussion of all the questions relating to the problem of psychological compatibility in interplanetary flight. Moreover, many of these questions still await formulation and solution. And although the science of psychology cannot, at present, answer many of the questions that come up in

practice, we believe that, on the basis of empirical observations, experimental data and the experience already gained in space flights, it is now possible to outline the ways to form the groups that are to train as interplanetary flight crews.

After the experimental psychological examinations have been conducted, the prospective crew will not only go through the various kinds of training together, but will spend their free time together as well. While in the past, cosmonauts were tested for neuropsychological stability in a surdochamber prior to making solo space flights, the crew of an interplanetary ship will in all probability not only go through a test for psychological compatibility under the model conditions provided by equipment on Earth, but will make several orbital flights of medium duration.

All this will enable the psychologists, methodologists, trainers and doctors to make a thorough study of the psychological compatibility of the crew, to train and knit it together for carrying out the complex mission of interplanetary flight. Needless to say, for this process to proceed with minimum wasted effort, we need scientific data on the psychological dynamics of isolated groups, as well as science-based methods of determining the psychological compatibility and readiness of a unified, friendly crew capable of accomplishing an interplanetary flight.

Man in the World of Professions

The social aspects of the scientific and technological revolution and its consequences are attracting considerable attention among researchers. The influence of scientific, technical and production processes on the destiny of the individual participating in them is an extremely intricate problem. This influence is not one-sided, especially if we take into account the fact that his activity is stimulated and his skill improves, although his labour is to some extent monotonous and depersonalised.

The connection between the individual and processes of specialisation or universalisation in his activity is part of this problem. If we examine the individual merely in the system of productive-labour functions such as a workman, he will appear to be the personification of production conditions, above all in his professional characteristics, the demands and forms of behaviour, realised in the labour process. The present article examines certain theoretical propositions concerning the interconnection of man and his profession in the scientific and technological revolution.

THE WORKMAN'S FUNCTIONS IN MODERN PRODUCTION

Let us recall that the interconnection between man and activity is determined by the concrete state of the social division of labour. At every given moment the nature of this interconnection depends on the existing types of labour. The 1926 population census in the USSR listed about 10,300 professions, the 1939 census, about 19,000 and the 1959 census, approximately 30,000. Every year more than 500 new professions come into being in the Soviet Union; moreover the natural withering away of the old professions occurs more slowly than the emergence of new ones. The quantitative increase in types of labour and the increase in the number of professions are a result of the steadily growing complexity of production.

One of the main features at the present stage in industry is the combination of highly automated operations with craft and manufactory types of labour within the bounds of one line of production, which means that ordinary manual labour often exists side by side with intricate mental labour. Judging by the real structure of work-places and the content of the activity of workmen, material production will for a long time need operatives possessing both very high and very little skill. Apparently, in the foreseeable future, it would be a

big mistake to proceed in theoretical extrapolations from the general prevalence of extremely interesting labour processes. At the same time the problem should be examined in the wider context of the social aspects of the attitude to work.

As a result of practical experience researchers are confronted with a demand for a more profound understanding of the processes which combine the workman with the conditions of production and of his own development. This also applies to the elaboration of problems concerning professional specialisation in modern production. The combination of man and his profession is a dynamic process which depends on different productive and socio-historical conditions.

Attention should first of all be paid to the difference between the labour function of a workman and his profession. The difference between these phenomena, which is sometimes somewhat incomprehensible is, from our viewpoint, a methodological prerequisite for the study of professions. Karl Marx pointed out that in the production process there develop "on the one hand, the material means of production, the *objective* conditions of production and, on the other, the functioning capabilities to work, the expediently displayed labour power, the *subjective* condition of production".¹

The difference between objective and subjective conditions of production in the labour process is expressed in the form of the difference between the labour function as a sum total of objectively set operations and the profession of a workman, which is a feature of the extent to which he is prepared to do his job. The function applies to the workplace and the profession to the workman himself. The study of labour functions, which under the general heading "the content of labour" are examined as a group-forming factor in production collectives, is a traditional trend in Soviet sociology. The functional structure of the collective, analytically singled out in this way, is part of the social organisation of the enterprise. The importance of this structure consists in the functional placing of workmen in one or another type of labour—manual, mechanised or automated—this structure making it possible to go over to defining the social connections within the enterprise.

Methodologically, the concept of a labour function is particularly important because it is understood as a basic element of the connection between the instrumental (technological) system of production and the social phenomena in the production collective. This connection can be presented in the form of the following scheme: instruments of labour—labour functions—distinctions between people according to the content of their labour—social groups according to the content of their labour—the functional structure of the staff of an enterprise. Such a scheme indicates, in graphic form, the transitions from the production-technical to the social factors of production, uniting these factors in the system of socio-technical organisation of an enterprise. Here it is important to note that it is the labour function in the interconnection of man and technology that represents the point

¹ Archives of K. Marx and F. Engels, Moscow, Vol. II, 1933, p. 15 (in Russian).

of departure in studying social phenomena in production. It belongs simultaneously to the technological equipment (workplace) and the workman (the content of operations), fixing the unity of different parameters of productive activity.

With a given piece of equipment, the labour function determines the objective content of the operations of the workman, the identical content of labour which depends on the level of production mechanisation and automation. It is this level that is an indicator of the corresponding labour function. In the functional structure, the workman plays the part of the performer of operations. The given feature (performance) characterises man only from the viewpoint of the labour process. In the Taylor system of production man, by reducing himself to this role, was turned into a part of (an appendage to) the production mechanism: while performing monotonous, mechanical operations, he supplemented by his labour the work of machines. In a broad sense, the organisational system, like the one described by Max Weber under the name of a bureaucracy, includes man as a functional operative, providing for the maximum elimination of his personal or individual traits.

Bourgeois theoreticians assume that functionalism of a bureaucratic organisation is predicated on a rigid regimentation of rhythms and actions in modern industrial production. The principle that "an organisation works better if the individual activity of the operatives is limited" actually reflects the postulate of capitalist rationalisation which seeks to formalise and subordinate to a single project all methods of incorporating the individual in the process of activity. In such a system, the individual merely plays a service role: he is turned into a functional operative in a set programme, finding an outlet for his other impulses only outside his work, chiefly in the form of mass consumption. Thus, one of the demands of production organisation is absolutised into a universal form of social organisation.

In examining the interconnection of activity and the individual in terms of the prospect of converting labour into life's prime requirement, the theory of scientific communism presupposes the continuous advance in the content (creative conditions) of labour, which makes it possible to turn the labour process into the realisation of the systematic and spontaneous, formal and informal efforts of the individual. Such a realisation reflects the intentional nature of the individual, the sphere of his needs and the majority of his vital interests. An essential and still inadequately studied aspect of the problem is how to combine, in theory and in future practice, the intentions of the harmoniously developed individual and the demands of his specialisation.

THE CONTENT AND SOCIAL STATUS OF A PROFESSION

If the labour function is a characteristic feature of the objective conditions and demands for combining the individual with labour, the profession is the method of including the individual himself in the labour process, and the accumulation by the workman of the necessary qualifications for performing a given function.

Historically, the nature of professions has changed, depending on the complexity of technology, the forms of organisation of labour and the training conditions. In modern production the profession represents an intricate complex of elements. The most important among them are:

the degree of training of the workman and the extent to which he is able to perform a given type of labour;

institutional recognition of the profession and the creation of a system of criteria for mastering it.

The skill of the workman, in other words, the level of professionalism, includes all the forms and means of training undergone by the workman to perform a labour function. If a secondary-school education is a necessary stage in professionalisation, it must be treated as part of the profession. Its content also covers all forms of specialised education and training in a given labour operation (skill and speciality). The definition of the profession, shared by most Soviet scientists, was formulated by Academician Strumilin as follows: "The sum total of special labour skills, acquired through school education and extramural training, usually combined in one person and united by a common name, for example, fitter, carpenter, violinist." The speciality, however, is a more concrete concept, a subdivision within the profession, which is exhausted by the "usual range of labour activity of one person"² (for example, plumber-fitter or electrician-fitter). That is why "fitter" is a general name for many fitting specialities which have definite professional features in common. A professionally trained workman is included in the system of the division of labour recognised by society.

The content of the profession does not include objective conditions of labour and the individual distinctions of the workman; the former are not included because they coincide with the functional specialisation of production or the system of workplaces and the latter, because they form the psycho-physiological structure of the individual which can be (and this is desirable) a prerequisite for a given type of professional specialisation. But this structure, naturally, does not predetermine for the individual his choice of type of professional specialisation. Every individual possesses the psycho-physiological data for choosing professions. The calling, which can be judged by the results of activity, can be displayed in different professions.

A profession becomes institutionalised from the moment it is officially included in the system of the social division of labour. This inclusion serves as a basis for elaborating the social status of a profession, which characterises the official or unofficial recognition of its need and popularity.

Sociological literature usually mentions two forms of status in a profession: economic and prestigious. The economic status depends on the level of the material reward which is expected (actually or potentially) during the choice of a profession. The socialist principle

² S. G. Strumilin, *Problems of the Economics of Labour*, Moscow, 1957, p. 12 (in Russian).

of payment according to the work done takes into account differences in the levels of reward depending on the size of the labour contribution and the expenditure on the professional training of a workman. The level of skill is responsible for distinctions in reward. That is why the economic statuses of different professions may differ in the size of remuneration, comprising a fixed scale of payment. Low-paid or highly-paid professions have a respective ranking in the value scales of preferences, according to the criterion for choosing a profession.

The prestigious status of a profession is determined by the content (creative nature) of the given type of labour. The work which presupposes monotonous manual operations or offers no prospects for promotion (for example, some jobs in the service sphere) determines the low prestige of the respective professions. On the other hand, their prestige is also determined by the degree of their popularity; even the names of professions are of significance: in some cases a change in the name has substantially raised the prestige of a profession.

The reasons for the popularity of a profession have so far been inadequately studied. Such factors as the arduous and complex nature of the work or the size of the pay do not offer a clear explanation, because their unambiguous influence on the popularity of a profession has not been proved. A number of professions which should be placed in the lower or middle brackets have a sufficiently high level of popularity and vice versa. But some tendencies, nevertheless, can be singled out: as a rule, professions where mental labour is involved are preferred to those involving manual labour; the intricacy of work, far from repelling, attracts workman; new professions are in most cases more popular than old ones. Of great importance is the evaluation of the social significance of professions linked with achievements in a given sphere of activity. Research work, for example, in physics, from the viewpoint of professional activity, is rated by school children three marks higher than in biology (ten-mark scale). It has been noted that men assess professions more strictly than women; the social origin and the place of residence of a workman, i.e., the real conditions in which he has to begin his labour activity, exert a great influence on his evaluation of professions. The same professions enjoy different popularity among different social groups.

The choice of a sphere of work is marked, for various reasons, by considerable continuity. The task of stimulating the processes of the growing social homogeneity of society is accomplished in the Soviet Union by sending foremost workers to study in higher educational establishments and by collective farms giving scholarships to the children of their members. This problem still requires a great deal of attention even today.

A number of researchers point to the need to consider the basic factors in the choice of professions, the so called stable motivation. These factors include the opportunities for creative endeavour, for advancement, the earnings and the social prestige of a profession. According to a poll carried out in Leningrad, the prestige of a profession holds first place among these factors. The attractiveness of mass professions for all these factors and sectors of the national

economy is shown in the following table (according to a ten-mark scale):

Industry	4.01
Agriculture	2.84
Transport and communications	4.40
Construction	2.97
Services	2.50
Education and health services	3.62

It should be noted, for comparison's sake, that the natural sciences rated 7.43 and the humanities 6.31 marks.³

The status of a profession is thus the focus of numerous theoretical and practical problems. Worthy of researchers' attention are questions like the assessment of the official and unofficial elements of status, the influence of the status on professional mobility, including the fluctuation of manpower, the study of the role of a profession's status in the adaptation of a workman to production conditions, his satisfaction with his job, and so on. These questions are of great importance for vocational orientation and the choice of a profession, because young people who begin their working life often have a distorted understanding of the attractiveness and social necessity of professions.

THE DYNAMICS OF PROFESSIONALISATION AND THE INDIVIDUAL

One of the aspects of the scientific and technological revolution is the accelerated process of professionalisation, understood as the development of the systems of professional training and the ensuing social consequences. This process has two sides, social and individual. In a broad social sense, professionalisation means the creation and development of social institutions and also of rules and standards connected with the shaping of the professional structure of society and the growth of the general demands made on the specialisation of workmen. On a social scale, professionalisation presupposes that every able-bodied member of society must acquire and constantly improve his special training. Accordingly, an individual makes use of his special knowledge to evaluate phenomena. Thus, special knowledge becomes the measure of the social activity of social groups and individuals, and a system of professional relations, standards and values is thus created.

In the narrower sense of the word, the process of professionalisation implies the formation of professional groups which have specific interests and values and also professional positions and roles. On receiving special training, a workman joins in labour activity, enters into labour relations with workmen in similar or kindred professions who make up the personnel of a given enterprise or institution. Placing personnel in categories is the first formal recognition of

³ See *Social Problems of Labour and Production*, Moscow, 1969, p. 50 (in Russian).

professional group-forming. Arising on a functional basis, such group-forming has as its criterion the nature of special training, i.e., the content of the subjective conditions of production.

The special professional role of the worker arises from the moment he acquires professional training. But the attitude to the performance of a given role can be dual, depending on what others expect of the possessor of the profession (exteriorisation of his role) and what he himself expects by acquiring it (interiorisation of his role). It is clear that different professional behaviour is expected from a mechanical engineer than from a lawyer or physician. Definite social values are associated with the acquisition of a profession: promotion on the job, earnings, the respect of people around him, and so on. For this reason, a person who has a profession can expect the realisation of his value criteria, depending on the real and subjectively understood importance of the given profession.

Individually, professionalisation implies suitability and preparedness to perform a given professional role. Suitability may be understood to mean the realisation of the psycho-physiological data (capabilities) of the workman in a definite type of labour; preparedness—the unity of knowledge, skills and willingness to perform this work. But, in reality, the individual assimilation of a professional role encompasses a more intricate complex of elements, the unity and consistency of which usually coincide with socialisation of the individual. These elements include labour orientation as joining the world of labour; professional orientation as to the determination of the principles in a more narrow totality of occupations; professional specialisation as a choice and preparedness to perform a definite type of labour; work as the actual performance of labour operations; and the attitude to labour as a subjective evaluation of a given type of work. All these elements characterise the individual perception of the given role and progress in discharging it. In this respect they can be understood as features of the role of the workman, because in their totality they represent the widely understood social role of the individual.

It goes without saying that this role not only includes professional, but also other aspects connected with the participation of a workman in the activity of his factory or office. These are different forms of social activity, participation in management and other collective measures, and a system of inter-personal ties. This is why the professional role, linked as it is with the content of special training and the performance of labour assignments by the workman, merely represents part of his role. In the concrete process of labour and in the corresponding labour organisation the individual has one professional role to play, namely, the one for whose discharge he becomes a participant in a given trade. Inasmuch as the individual can acquire several professions and skillfully perform different types of labour, his professional role is determined not only by his training but also by the degree of his participation in the organisation of labour. For this reason a workman cannot, as a rule, be a professional turner and professional singer at the same time. At times, due to production

necessity he has to combine different labour duties but his basic profession which determines his special role in the organisation comes to the fore.

The sum total of workers, connected by one production process and similar professional roles (in their professional training), make up a professional group. Members of such a group usually have a similar specialisation and common job interests (values). A professional group is also marked by some distinctions of culture, one of whose manifestations may be a professional language consisting of special turns of phrase and terms, understood by the members of the group; it also includes special forms of professional solidarity, developed on the basis of mutual understanding and the common interests of the group members. The concept of a professional environment which has no localised group restrictions is more extensive. The concepts "workers' environment", "teachers' environment" and "scholars' environment" fix professional features which ultimately extend to all participants in the respective types of labour.

A professional environment is formed by incorporating trained workers in the respective professional groups on the basis of the community of labour processes. But, owing to differences in specialisation, levels of generalisation of labour functions and also to class distinctions under socialism, a professional environment may be regarded as a big social system which includes all representatives of a maximally generalised type of labour (for example, industrial, agricultural) due to their class affiliation or as a small social system which consists of representatives of a concrete, empirically given type of labour (for example, setup men of semi-automatic lathes, fitter-repairmen, and others). Each small system is part of the big one, at the same time possessing the advantage of standing out clearly and capable of empirical reference. Researchers could take an interest in such problems of the professional environment as the mechanism of its formation, the traditions it develops, and the social values of its representatives. But the study of problems of this kind can no longer be purely theoretical. Here we approach the boundary beyond which empirical methods reign and the need arises for concrete studies.

If in the characteristic feature of a professional environment emphasis is laid on the correlation of the individual and the conditions of his activity and also his ties with persons of the same or kindred specialisation, the concept of a professional structure highlights the organisational aspect of combining professions with labour processes.

Structure is always related to the organisation or system regardless of whether an individual production collective or society as a whole is examined. The difference between a production collective and the society as a whole is the initial analytical method in studying the professional structure. The level of society and the level of a collective have specific elements in evaluating the content of this structure. If the professional structure of society represents the system of social division of labour expressed in an institutional form, the professional structure of a collective is the unity of professional groups (or categories of personnel) of the given organisation (enterprise). Within

the enterprise the professional structure assumes the official form of a staff schedule, made concrete in its levels of organisation (enterprise, shop, department, section). Such a schedule is the index of the professional structure of a definite level, up to the structure of a primary collective. In a primary collective (for example, a team) the professional structure may be represented by distribution of the individual roles of workmen in the labour process. This form of structure corresponds to the functional scheme of workplaces and specialisation demands connected with them. A more precise elaboration of such a structure may be of importance for restraining the extensive factors of production growth, namely, for improving the organisation (professional composition) of the latter.

We examine the professional structure at all levels as part of the social structure. The acquisition of a profession is one of the main elements of the socialisation of the individual, that is, of his inclusion in the system of existing social relations. The professional ties developed on this basis represent a special form of social ties, irrespective of whether we examine the level of the production collective or of society as a whole. The professional structure of society unites all the diverse professions and different labour positions, connecting the system of social relations with society's labour activity. The professional structure represents, as it were, a projection of the social structure on the labour processes, inasmuch as it determines the relations between people that are established in these processes.

The unity of occupations and professional differences is fixed in these relations as a special form of social differences. Such differences arise on the basis of the differentiation of specialised training and status levels; therefore, the professional structure may be examined as a hierarchic system consisting of ranked social positions of workmen. The movement from one position to another or between positions within one rank is called professional mobility.

The demand for social equality as society makes its transition to a higher phase of communism, put forward in the programme documents of the CPSU, should be understood as the gradual withering away of some advantages and privileges connected with the acquisition of professional status. The preservation and obvious deepening of differences in the specialisation of workmen is accompanied by the levelling of their material position and the abolition of any social preferences in the choice of professions. In a communist society, specialisation will only presuppose individual preference on the basis of specific inclinations and talents. Rational understanding of the correlational social significance of all types of labour should lead to the planned regulation of labour resources within the range of occupations and types of activity which society needs.

But in present-day conditions socialist society has to apply various additional material and spiritual incentives, especially when new workers have to be attracted to scarce or less popular professions. This is the case, for example, with some types of low-skilled jobs, in so far as they are still preserved in modern production. But in such jobs (loading, delivery, warehouse work, and some others) both the pos-

sibilities and the demands for accelerated mechanisation are increasing. The Ninth Five-Year Plan envisages that technological progress must assume higher rates in sections where monotonous and little interesting manual labour is employed.

The need for closer attention to questions of professional mobility is now dictated by the growing urgency and ramified consequences of the given process. In conditions of the scientific and technological revolution the quick shifting of manpower, changes in professions and the accelerated pace of population migration are inevitable. According to some data, modern production, owing to the continuously changing conditions even now demands that a workman change his profession four or five times during his working life. Polls indicate that more than half of the workers who study without dropping their jobs explain this by the need to change their profession. One must also take into account the lag of the old method of training behind the new demands made by production. Greater attention is also paid to such a form of mobility as manpower fluctuation and the resultant stabilisation of production collectives.

It is customary to divide professional mobility into the process which takes place within one generation and the process between generations. Within one generation, mobility assumes such forms as individual professionalisation, the change in the professional positions of one rank and the shift from one position to another, a higher one. The inter-generational mobility expresses the tendency to preserve or change the professional positions of parents and children. Studies show that the choice of a profession (for example, by secondary school graduates) is usually associated with the professions of parents and the appropriate conclusions can be drawn on the nature of changes in the orientation of new generations. For instance, it was noted in Leningrad that professional continuity of generations is preserved most of all in the group of industrial engineers (47.7 per cent of the children prefer to choose the profession of the parents), then in the group of scientific workers (36.6 per cent), and lastly in the group of physicians and teachers (13.3 per cent). For industrial workers this index is 8.8 per cent and for workers in the services 6.1 per cent. At the same time 39.9 per cent of the children of workers and 42.1 per cent of the children of service employees wish to be engineers.

An explanation of these data involves some difficulty. The striving for a higher education is undoubtedly of positive significance; it is maintained and developed by propaganda, by traditions in the family and by school education. But there is no direct conformity between the orientation towards education and the real labour process; ultimately it is the needs of production that determine the nature of distribution of manpower resources. Moreover, a tendency of reverse correlation may be noted between the striving to be an engineer and the real needs of production in the respective personnel. In an optimal variant, the balance of professional orientation must correspond to the balance of labour: mass professions are in mass demand, but in reality disfunctional phenomena, too, are possible, which may lead to an

unjustified change of profession and to greater manpower fluctuations. Such fluctuations attest to the dissatisfaction of the individual with the conditions of his activity and, consequently, to the hidden or open defects in professionalisation.

The change of professions is formalised from parents to children in a transitive matrix of professions, one of whose indexes is the ratio of the number of children who have chosen the profession of their parents to the total number of children of the parents in the given profession. In the given example, this index for worker families is 1:11; but the real index for worker families is 7:10. The obvious discrepancy between orientation towards one type of labour and the work one has to do (it is called the tendency of professional reversivity) is accompanied by complex individual and social consequences which require a careful study. If an enterprise has many dissatisfied employees, grounds arise for tension and disunity of interests: ultimately both the personnel and production suffer. Hence, ways must be found of eliminating this discrepancy.

The study of professions can be utilised for deeper understanding of the problems of the individual's specialisation in conditions of the scientific and technological revolution. The need for individual professionalisation, dictated by higher demands for specialised knowledge, is realised in such stages of the development of the individual as general preparation (school education) and special training, which are naturally supplemented by the inclusion of the individual in diverse social ties connected with different sides of his life and activity. At the same time the combination of labour with the achievements of science and technology leads to the elimination of the narrow bounds of specialisation within the main sphere of activity giving rise to a tendency to universalise the individual which is the result of his multifarious actions. The correlation of these two aspects in the development of the individual remains highly intricate, conforming to the complex nature of the present stage in the development of production and labour. But an analysis of the main tendencies reveals beyond doubt progressive changes in the development of production and the personality of the workman, specifically the improvement of conditions for the allround development of the individual.

* * *

The fusion of the advantages of the socialist economic system with the achievements of the scientific and technological revolution implies among other things the rationalisation of the conditions for training competent personnel, and the coordination of the functional and professional sides of modern production. Achievements along these lines represent the basis for more efficient decision-making.

The Elementary Particle and the Universe

The title of this article can no longer seem extravagant from a strictly scientific point of view as would undoubtedly have been the case in the first two or three decades of this century, not to mention earlier times. The problems of the relationship between fundamental particles and the Universe have now left the unfirm philosophical ground that produced them originally to become exciting, vital problems in physics and astronomy, not to say more.

The reasons lie rooted in the development of natural science. The discovery of the electron and radioactivity paved the way for the solution of two great riddles concerning the problem of matter in its micro- and macro-states: the structure of the atom and the source of solar (stellar) energy. The discovery of the quantum of action gave birth to non-classical atomism and an internally related new understanding, unknown to the old natural science, of the relationship between the fundamental and the composite, the part and the whole, the element and the system, which was bound to extend to problems of elementary particles and problems of the Universe, connecting them in some way or other.

Questions of great philosophical scope began to arise in physics (so far it is simply a question of posing these questions, we are still a very long way from providing the answers) and as always in such cases where questions are being posed the history of development of philosophical thought can come in very useful here as providing indications as to possible (by no means practical, of course) solutions.

Indeed, if we turn to the great philosophers of the past who studied problems of the Universe before natural science could really lay claim to the name of science we can easily observe ideas that are in the vanguard of the modern science of nature.

The great philosophical precursor of Giordano Bruno, the dialectician Nicholas of Cusa with his teaching of the "coincidence of opposites" (*coincidentia oppositorum*) posited that the "absolute minimum" (even the most minute thing) coincides with the "absolute maximum" (the whole world).¹

Leibnitz held that monads, which according to his theory underlie everything, are at once isolated and connected to the whole world, and indeed themselves represent, in the philosopher's own words, "contracted universes".

¹ It should of course be borne in mind that Nicholas of Cusa was referring to a divine being filling the whole world and omnipresent.

Democritus, the great materialist of ancient Greece and one of the founders of atomism, regarded atoms not simply as indivisible microscopic forms but as whole vast worlds. In a way they are very reminiscent of Markov's "fridmons", ultra-contemporary concepts of the microcosm and the universe that developed on the basis of the general theory of relativity, and about which we shall be speaking further on.

Let us take a more systematic look at ideas relating to our subject.

Suppose the highly active particle (adron) *A* is transformed ("decays") into the combination (becomes the system) of adrons *B* and *C*

$$A \rightarrow B + C,$$

the probability of such a transformation being very great indeed. Then the sum of the corresponding quantum numbers of adrons *B* and *C* should (according to the conservation laws) coincide with the quantum numbers of adron *A*. This is one of the essential conditions of the transformation of adrons being considered.

Another condition is, of course, mass defect. If the mass defect of particle *A* is small, i. e., if the particle has sufficient energy for the transformation ("decay" into particles *B* and *C*) to actually occur, it is said that particle *A* *consists* of particles *B* and *C*. Suppose, particles *B* and *C*, in turn, consist of particles with a smaller mass than the original ones, while these latter consist of particles with still a smaller mass, then how far can the process of building particles of a given mass out of particles of smaller and smaller mass go? The uncertainty relation gives the answer to this question: it turns out that the process does have a limit beyond which the total mass of particles forming the structure of the original particle begins to exceed its mass.

If, on the other hand, the mass defect of particle *A* is big, i. e., if particle *A* does not have sufficient energy for the above-said transformation to occur, it is said that particle *A* is *composed* of particles *B* and *C*.

In this case, *B* and *C* are virtual particles, while particle *A* has a virtual structure. Here the particle of a given mass appears to be made up of particles of greater mass. Some explanation is necessary.

If in the process of combining particles *B* and *C* thanks to the energy released the total mass of particles *B* and *C* is reduced this testifies to the formation of a system (*B+C*) qualitatively different from the simple combination of *B* and *C*. Secondly, although in the formation of the system (*B+C*) the energy released reduces the total mass of particles *B* and *C* in accordance with Einstein's mass-energy relation, only strong interactions can lead to a large energy release and, hence, to a large mass defect in the system (*B+C*). In this case particles *B* and *C* cannot and do not exist in the structure of particle *A* really, but only exist virtually, as a possibility (which only becomes reality given certain new conditions, in which particle *A* acquires extra energy in an appropriate quantity).

From the above point of view it should be remembered that any elementary particle can be regarded as compound, while a compound fundamental particle can be regarded as elementary. It all depends on the conditions of transformation of particles (the relativity of the

concepts of elementary, compound and structure in the world of elementary particles). From the same point of view it is believed that hypothetic quarks have a mass equal to the mass of many nucleons. Generally speaking, all assumptions of this kind posit the idea that strong interactions are wont to create a corresponding mass defect in particle systems.

Now let us assume that certain elementary particles are composed of quarks and the latter of still heavier particles and so on. To what conclusions would such considerations lead if not to admission of the existence of fundamental particles of an infinitely large mass?

This problem was investigated by M. Markov, who showed that there is an upper limit for the mass of fundamental particles. He called such particles maximons. In his opinion, maximons, these gigantic particles on the scale of the microcosm, combine to form lesser particles. During this process of combination a new mechanism comes into action, gravitational collapse, the existence of which serves to explain astronomical phenomena.

Gravitational collapse—the spatial compression of a system under the impact of the gravitational forces of the bodies constituting it—practically instantaneously increasing the particle binding energy, produce a tremendous mass defect, a vast difference between the sum of the masses of the maximons and the mass of the particle into which they are being compressed by gravitational collapse. For the collapse to begin a colossal density of matter far greater than anything in the part of the Universe that we know is required. Such a density could have existed in the conditions in which our Universe (according to A. Fridman's theory) began to expand. Thus, according to the idea of maximons the emergence of the elementary particles we now know coincided with the beginning of the expansion of the Universe that is still in progress.²

We do not propose to examine the maximon hypothesis in detail, as this lies outside the scope of our rough outline. We shall simply note that it arose on the basis of the concepts and principles of contemporary physical theories. Questions of this kind will, we think, be solved more precisely on the basis of more general and deep-going theories of fundamental physics than those of today, which will be free from the contradiction between quantum and relativist physics that exists today. We should simply like to stress that contemporary physical theories place in a fairly concrete area of natural science the question of the unity of the elementary particle and the Universe, the infinitely simple and the infinitely composite, although more than enough problems remain outside their domain. Scientific work in this direction is still in progress and will continue, and no doubt new facts will be brought to light towards which science is at present advancing, without knowing how close it is to them.

A confirmation to some extent that this is the case is the very recent theory of fridmons, likewise belonging to Markov. Let us take

² For more on maximons, see M. Markov's article in *Physicalische Blätter*, No. 8, 1969.

a very brief look at this hypothesis. According to the general theory of relativity situations can occur where gravitational interaction leads to a great mass defect, i. e., they can play in the systems in question the role of strong interaction. Thus, because of a large gravitational mass defect the total mass of a closed universe is equal to zero. In other words, the mass of all the bodies in the Universe is reduced to naught by gravitational interaction between them.

If we take Fridman's Universe as not entirely closed ("almost" closed) the total mass of such a universe, depending on that "almost" can be as small as you like, for example, equal to the mass of a neutron, while for the outside observer its behaviour will not differ from the behaviour of an elementary particle such as a neutron (although it may contain a whole system of galaxies).

Such universes have the following basic property: if a semi-closed universe arose with an electrical charge of any power, such a system is unstable and tends to reduce its total mass (engendering various pairs of charged particles and thereby decreasing its total electrical charge) and thus isolate itself as far as possible. It turns out that the system tends towards the same finite system with a total electrical charge of a definite magnitude irrespective of the magnitude of the original electric charge (to which there is no limit).

It is not to be excluded that the ultimate value of the electrical charge of a finite system may be close to the charge of an elementary particle. Such a system in its final state is called a fridmon. Markov claims that a fridmon with its remarkable properties is by no means pure fantasy. The Einstein-Maxwell system of equations contains fridmon solutions.³

Thus, contemporary physical theories permit us to treat the universe as a microparticle, and a microparticle may contain a whole universe. In other words, contemporary physics shows the combination, in one entity, of the opposite properties of superlarge and ultra-small worlds.

Despite the hypothetical nature of such propositions and theories, especially if one considers that they only partially take into account the quantum nature of the laws of the microcosm and the laws of relativity are regarded as universally applicable, even for the smallest distances, it can nevertheless be taken as proven even at the present stage of scientific knowledge that the rift the human reason has created between the Universe and the microcosm is only apparent, and the problems of the Universe are closely related to the problems of the elementary particle. Moreover, let us stress yet again, such unity and such a connection is the result not of "hazy" philosophical speculations but is indicated in the precise language of its concepts by such an exact science as physics.

By way of conclusion, let us examine one statement by Selmanov that has close bearing on our theme. According to Selmanov, three concepts of universe should perhaps be distinguished in cosmology,

³ M. A. Markov, "On the Concept of Prime Matter", *Voprosy filosofii*, No. 4, 1970; M. A. Markov, *The Closed Nature of the Universe and the Laws of Electrical, Baryon and Lepton Charge Conservation*, Preprint 024534, Dubna, 1969 (in Russian).

which can be referred to as follows: "universe as a whole", "universe as an entity" and "whole universe", where the first designates the whole without reference to its parts, the second the whole in relation to its parts and vice versa and the third all the parts without reference to the whole. Confusion of these concepts can lead to serious misunderstandings.⁴

It seems to us that what Selmanov has written about the correlation of the whole and its parts as applied to the Universe also refers *mutatis mutandis* to the elementary particle.

We feel that we ought to distinguish between three concepts of elementary particle corresponding to the three concepts of the Universe, expressed in the following terms: "elementary particle as an elementary particle", "elementary particle as a system" and "elementary particle as an elementary particle and at the same time as a system" (the first two corresponding to the first two concepts of Universe, the third signifying that from the existence of each elementary particle necessarily follows the existence of other elementary particles, meaning adrons, and thus, corresponding to the third concept of Universe). Thus there exists yet another aspect of the unity of the Universe and the elementary particle, which finds expression in their concepts.

⁴ See A. L. Selmanov, "On the Posing of the Cosmological Problem", *Proceedings of the Second Congress of the USSR Astrogeodetic Society*, Moscow, 1966, pp. 82-83 (in Russian).

The Aesthetic Conception of Man in the Literatures of the Soviet East

When we say that one of the remarkable accomplishments of modern literature of the Soviet peoples of the East is the ability to show man's inner world fully and in depth and to present him in his diverse links with life, the question naturally arises: is this tantamount to saying that there was nothing of the sort in the literature of the past?

There is no short answer. It is true to say, however, that the study of man's inner world is an accomplishment of literature at a fairly high stage of its historical development, and that this picture of man's inner world is something that has developed and changed dialectically from one epoch to another. The outstanding Soviet philologist D. Likhachev once said that art in the West is psychologised in the pre-Renaissance epoch, as the culture of the 14th century moves within the limits of the religious consciousness, towards man and his more realistic depiction. That is when it first begins to give greater reflection to his interests and becomes more "humane" in every respect. But in the late 14th and the early 15th century "writers found themselves... concentrating on man's individual psychological states, his feelings and his emotional responses to the events in the world about him. But these feelings and individual states of the human soul were yet to be brought together to constitute characters. Manifestations of psychology do not shape out as psychology [ital. mine—Z. O.]"¹

Every epoch carries with it its own understanding of this problem and fills it with its own content, working out its own view of the tasks arising in the study of man, depending on the requirements of social, cultural, historical and national development, the level of moral and ethical notions, the extent of the freedom of man's mind from religious dogma.

The view held by historians of Russian literature, that the lyric more so than the epic was connected with the psychological analysis of human character as the various modes and aspects of its aesthetic cognition took shape in the course of history, is confirmed not only by the history of Russian literature and of the history of Russian realistic prose, which was inaugurated by Pushkin's *Tales of Belkin*. Grounds for this and similar conclusions are also provided by ancient lyrics and the lyrics of oriental poets in the early Middle Ages.

¹ D. S. Likhachev, "The Pre-Renaissance Period in Rus in the Late 14th and the First Half of the 15th Century", *The Literature of the Renaissance Epoch and Problems of World Literature*, Moscow, 1967, p. 157 (in Russian).

We discover this capacity for autonomous psychological movement, the capacity for self-knowledge and self-revelation, naturally within the limits of the aesthetic requirements of that epoch and occasionally even beyond them, in short, the essence of psychological analysis, in Rudaki's gazel *Complaint of Old Age* (9th-10th centuries), one of the two works that have come down to us in full from that period.

I. Braginsky, a well-known Soviet orientalist, is quite right in saying that Rudaki was the first of the classics who focused attention on man in his writings. "He described nature, he taught wisdom, he sang the praises of kings, nobles and great warriors, but he was the first to center attention on man himself, on the human individual as such."² But centuries would pass before the historical prerequisites arose for the emergence of a new type of narrative and the need dictated by the requirements of aesthetic development, for works whose plot could be structured without verse. It took centuries for man's mind to be freed from the influence of religion and for realistic prose to appear.

We find a different picture in the literature of the European nations. No more than ten years passed between the appearance of Pushkin's *Eugene Onegin* which paved the way for Russian prose, and Lermontov's *A Hero of Our Time*.

In French literature in the first quarter of the 19th century Stendahl already concentrated his aesthetic analysis on the psychological content of character. But let us bear in mind that he had a predecessor in Benjamin Constant, whose *Adolphe* marked a natural and sharp turn in French literature towards a new mode in analysing reality and the human heart. A few decades earlier we find French psychological analysis inaugurated in 1731 by Abbé Prévost's *Manon Lescaut*. Moreover, it has been observed that in creative method modern writers frequently belonged to something like different periods in the development of realism. Thus, we have A. Chicherin's interesting observation that "In the mid-17th century the novels of Madame de Lafayette were so realistic in their subtle, labyrinthine and psychological analysis that they did not fit into the literature of the rationalised passions, and were the embryo of a distant future."³

To return to the East: what did its great classics produce in developing the aesthetic thinking of its peoples over the centuries? This is a period of tireless efforts to create great epic canvasses, whose ethical and aesthetic importance has proved to be of cardinal importance for the mediaeval literary tradition of the world and is of lasting importance for our own day.

A heroico-romantic love poem, a new development for the classical literature of the Middle East appeared in the 12th-century poem *Khosrau and Shirin* by Nizami (the second poem of his *Hamse*). Replying to a question which he asks not only of himself, but of all

² I. Braginsky, *Twelve Miniatures*, Moscow, 1966, p. 43 (in Russian).

³ A. V. Chicherin, *Ideas and Style*, Moscow, 1968, p. 74 (in Russian).

the literary men around him and of his readers, Nizami indicates with great precision the new aspect of social consciousness which had impelled him to undertake a work that was novel and entailed much effort in his day:

I have a treasure like the *Mahzan-al-asrar* [A Treasure of Mysteries],
Why should I shoulder the burden for the sake of [describing] passion?
But there is no one in the world today
Who does not have a passion for books about passion!⁴

A comprehensive analysis of Nizami's writings, and of this poem in particular, enables Bertels, a leading scholar on Iran, to reach the following conclusion: "Nizami was quite obviously not trying to divert his readers with an abundance of twists and turns in the plot, a rapid succession of scenes, or the fantastic exploits of chivalry. His was a different task: he sought to show the reader the characters of the three principal heroes of his poem [Shirin, Khosrau and Farkhad—Z. O.] in their full stature. The whole complexity and diversity of these characters are brought out fully as they clash with each other, thereby enabling Nizami brilliantly to solve the task of structure in the poem itself.... This is the first time that man's personality was shown, in any literature of the Middle East, in all its wealth, with its contradictions, and its ups and downs."⁵

The lyrical and lyrico-philosophical cycles of Hakani, Omar Khayyam, Hafiz, Fuzuli, Navoji's *Hamse* and Jami's *Haft aurang* carried on and developed the achievements and discoveries of Rudaki and Nizami, who had laid the foundations for the future study of man in Iranian, Azerbaijan, Uzbek and Tajik literatures and also in literatures close to them in language and tradition.

Although for a number of historical reasons, of which the Mongol invasion was the most important in political and economic consequences, the natural development of the peoples of the East was interrupted and slowed down for a long time, the existence of artistic tracts created by the writers of the Middle Ages necessarily had an influence on the shaping of definite traditions in the depiction of man and the cognition of his substance in the modern epoch.

Considering the great wealth of characters and types in all the diversity of their socio-historical and personal expressions, naturally within the limits, imposed on man by his feudal dependence and subordination to definite hierarchical class rules and religious dogmas, one appears to be justified in insisting not so much on the absence of any traditions of psychological analysis in the past as on the swell of a new "tide" of psychological analysis in literature in the mid-20th century under the new socio-economic formation in the countries of the Soviet East as a result of the triumph of the Great October Socialist Revolution. Indeed, it is in the period of socialist construction on the ruins of Oriental feudalism, as the socialist nations and their new, socialist culture took shape, and as their literatures and

⁴ E. E. Bertels, "Nizami and Fuzuli", *Selected Works*, Moscow, 1962, p. 219 (in Russian).

⁵ *Ibid.*, pp. 227-229.

cultures interacted and linked with each other in a sphere extended beyond precedent, that Soviet writers not only reviewed and reconsidered the old traditions and notions of man, but also created the images of new men produced by the new formation, studying man in a situation in which the old social ideology was broken up, in unprecedentedly complex relations with reality, gaining a new knowledge of the world and opening up for themselves man's renewed and re-established inner world.

* * *

The depiction of the new man born of socialist reality was not to be limited either by the instruments of the normative educational aesthetics nor by the methods of heroic idealisation which sprang from epic tradition. The tasks of accelerated aesthetic development inexorably required the closest attention to the new man's inner world, to the shaping of his individuality which was taking place within a definite labour and social collective, *a collective of personalities*. Private family life, marked by striking changes brought about by the new social relations as established in socialist legislation (with an eye on woman's material and legal equality) was no longer to be concealed from the public eye or detached from the general socio-economic problems of the new period. Hence, the natural emergence in the literatures of the Soviet East of the everyday-life-of-the-family and psychological novel unknown to tradition, a novel which appeared in this region with *a time lag* that was historically rooted.

Let us add, however, that this lag is a highly relative one. The appearance of narrative genres of the new type, of the new structure was *late* when compared with the development of the genre in European literatures, but it was most *timely* from the standpoint of the internal regularities and tendencies of development of the Eastern literatures themselves. It was even futile to think of works in which the individual was in the foreground and was subjected to socio-psychological and aesthetic analysis with the instruments of realistic narrative, as this is done in, say, Chinghiz Aitmatov's works, before the socialist revolution actually took place and before the very way of life was changed, producing the conditions for changing the psychological and national structure, which had been conserved by the patriarchal, feudal relations.

Mukhtar Auezov, one of the founders of the literature of the Soviet East, welcoming the appearance of Aitmatov's early works, drew special attention to the young writer's ability, highly unusual for Kirghiz literature, to show men and their relations "from within as it were". While emphasising the importance of this idea in the present context about the poetics of Aitmatov's stories being so unusual for Kirghiz prose, we must go on to consider the creative and socio-ethical stimuli which directed the pen of the talented writer, and the substance of his innovations, which marked a whole stage in the development of the aesthetic attitude to reality, of its emotional and imaginative assimilations.

Let us recall that Aitmatov's story, *The First Teacher*, ends with these significant words: "Just at present I do not know what my next picture will be. But there is one thing I am very sure of: I shall seek."⁶ Just before that the story-teller reflects that the picture he had produced, re-enacting the events of a not too distant past, could have been quite different. The writer has told us about the life of a man boundlessly dedicated to the ideals of the revolution. His selflessness and self-sacrifice to make knowledge illumine the soul of his people became legendary. This man, Duishen, having performed his exploit of high nobility and great moral power, quietly retreated into the background as he grew old, and appeared to fuse with the steppe and to dissolve in the everyday life of the new countryside.

Aitmatov tells us the story of Duishen's life and, one would think, everything that should characterise him as an outstanding personality.. His story culminates in the teacher's struggle to save the girl Altynai and to secure her future, a girl who remained his one and only inexpressed love.

Towards the end of the story we find the writer disturbed. He is clearly aware that his story could have been made up of other episodes, perhaps no less expressive than those he himself and we, his readers, feel to be the principal and only necessary ones in his picture, and that the picture itself could have been done in a more complex or a more simple, or in a more subtly selected spectrum of colours. For Aitmatov himself everything that he has written amounts to no more than "études and sketches" of a canvas he had started to work on long ago. He says:

"They are many, and I have made many fresh starts. But it is much too early to judge of the picture as a whole. I have yet to find the main thing.... As I walk in the tranquil hours just before dawn I keep turning all this in my mind over and over again. This I have done on many occasions, and I have always been convinced that my picture is still no more than an intention."⁷

Let us recall that *Jamilya* (1958) also opened with the story of a young artist about his picture, which he was too shy to exhibit although there was "nothing in the picture to be ashamed of". It was as "unadorned as the soil depicted on it".⁸

In *The First Teacher*, we find the story-teller having the same doubts about whether he had succeeded in putting the final touch to his canvas that would make his idea shine through and give life to his heroes. His possibilities have been far from exhausted.

Nevertheless, the writer feels that the story on his mind is so important that he needs to come into contact with a broad readership and that, despite his awareness that his work is far from finished, he decides to share his thoughts about the unfinished picture with other men.

⁶ Ch. Aitmatov, *Stories*, Moscow, 1970, p. 360 (in Russian).

⁷ *Ibid.*, p. 317.

⁸ *Ibid.*, p. 399.

Aitmatov has undoubtedly achieved the main thing: his story is echoed in the heart of everyone who reads it. But with his work already finished and his brushes washed, he insists: "I shall seek".

Indeed, Aitmatov's writing is marked by insistent and purposeful quest for means of aesthetic expression, for the fullest and most comprehensive embodiment of the character of our contemporary, of the very origins of the new man who is born in complex and frequently dramatic circumstances. This story once again confirms, in particular, the idea that at a definite stage in its development didactics comes to fulfil a qualitatively new ideological and aesthetic function, serving to educate the integrated and harmoniously developed personality.

When *Jamilya* appeared in 1958, the critics were quite right in saying that it marked a new stage not only in the aesthetic assimilation of reality, a qualitatively new stage in the development of Kirghiz prose as a whole and of the lyrico-psychological story as a genre in particular, but also in the new tendencies marking a new stage in the development of Soviet multinational literature which began after the 20th Congress of the CPSU in the second half of the 1950s. But if we consider *Jamilya*, and all of Aitmatov's subsequent writings, in terms of direct literary interconnections and interactions between the national literatures and the influence of the Russian school of the realistic novel, we must say that his writings epitomised the achievements and innovatory aspirations of Kirghiz and Kazakh writers and in the first place, of course, of Mukhtar Auezov, whose fitting continuator Aitmatov showed himself to be in his very first stories.

Many Soviet and foreign critics who wrote about Aitmatov sought to discover the essence of his style and the reasons for the charm of his personality and talent. They saw Aitmatov's stories as an organic blend of terse but expressive means in modern psychological prose with the colourful metaphor of idiom and the romantic elevation style traditional in oriental literatures. This is quite right, but more needs to be said. It is, after all, least of all possible to analyse charm in scientifically authentic terms. It acts on the heart and mind, emits warmth and arouses the interest. If we were to divide the poetics of Aitmatov's stories into its components we would not discover anything purely novel in any of these parts and elements constituting the aesthetic whole.

Indeed, his stories like *My Slender Little Poplar in the Red Scarf* and *The First Teacher*, are structured on the lines of the most ancient methods of setting, where one story is framed within another. *My Slender Little Poplar* starts with the author's foreword, "In Lieu of a Prologue", which is followed by the "Driver's Story" and the "Road Builder's Story". The story runs full circle with the author's "In Lieu of an Epilogue." In *The First Teacher* this method is once again put to the test: the story begins with a foreword from the author, who is the story-teller, then the girl Altynai, the heroine of the story, carries on the tale with the start of a new chapter in the form of a letter in which she confides her thoughts. The elements of such a composition are equally obvious in *Mother's Field*.

What we find very prominent in all these stories is the poetic

symbolic images, like those of the poplar, the most traditional image not only in Kirghiz lyrics but in the lyrical poetry of many peoples of the East, and also of the Ukraine.

Another specific feature of Aitmatov's style will be found in his links with the poetics of Kirghiz folklore. We find such folklore metaphors in his stories as: "Winter had migrated beyond the pass. Spring was already driving its blue herds before it."⁹ The day Lenin died we find Duishen walking "harshly silent, with his eyebrows drawn together like the wings of the eagle, and his face seemed to be chiselled from black, well-tempered steel".¹⁰ We also find in his prose intonations of the folk song with repetitive beginnings: "And you could hear the wind tearing through the cracks. And you could hear the falling snowflakes rustle on the straw."¹¹

There are any number of examples to show how Aitmatov's prose quite unexpectedly realises, to reveal the essential aspects of the mentality of his characters, various elements of ancient Kirghiz *arman* and *koschok*—plaintive songs, lamentations, maledictions. All of this is an indication of the writer's profound and organic bonds with the land of his forefathers and contemporaries, of his indissoluble links with his people's spiritual culture. No wonder the writer is so moved by the image of the land, which produces in his soul a great number of diverse associations and helps him to express the depth of his hero's emotions.

But apart from the objective indications of this which we find in his writings, Aitmatov has himself spoken out on this score. When the French poet, Claude Couffon, who wrote an introduction to the 1964 Paris edition of Aitmatov's stories, asked him why his prose was so poetic and how he succeeded in making this highly pronounced and invariable element of his style faithfully serve him to depict the most diverse situations in life and psychological emotions, Aitmatov replied: "I think the reason is two-fold. First, I am a Kirghiz. You recall that Kirghiz literature, initially oral folklore, traditionally inclines to epic poetry.

"The whole culture of my people has been fostered on epic tales of which *Manas* is the most famous and important. In my writing I try to remain faithful to this traditional style of poetic depiction, whose imagery, I think, can be well used to show the whole complexity of modern reality. ... The second reason is a much more personal one: it is my profound conviction that poetry is an inseparable element of any literature. Prose, if it is poetic, gives the reader both aesthetic pleasure and joy of a purely intellectual order."¹²

While noting such a specific feature of the Soviet multinational novel as the enrichment of its stylistic means with folklore images and motifs, we must remark on the important generalisation made by T.

⁹ Ch. Aitmatov, *Stories*, p. 343.

¹⁰ *Ibid.*, pp. 336-337.

¹¹ *Ibid.*, p. 337.

¹² B. Nevskaya, "Chinghiz Aitmatov's Stories in France", *Voprosy Literatury*, 1965, No. 11, p. 254.

Motyleva, the well-known Soviet student of foreign literature, who says: "The revival of folklore imagery and motifs and their introduction into the modern novel has all been taking place not only in the literature of the developing countries of the non-European continents. We find this also to be so ... in some of the 'old' European literatures. Elements of folklore now and again turn out to be necessary where the writer turns to the theme of a social change and analyses the shifts taking place in the midst of the peasant masses."¹³

But if a writer's innovation could be measured only by the quantity or quality of the bookish or folklore poetic means invented by himself or renewed with the aid of his aesthetic imagination, his taste and education to express the aesthetic truth of his day, his books would hardly impell anyone to give thought to life, they would be deprived of their principal ideological and educational function and would cease to serve as objective indicators of the level of his people's social and aesthetic development.

Aitmatov's innovation, his aesthetic discoveries made in the years which were so remarkable for our generation consists in the sincerity of his tone, in the confidential intonation with which he addresses the reader, in his concern with diverse human characters, their life-stories and circumstances that had not been studied or analysed before him by any writer of his own nation, and in some instances by any writer in Soviet literature as a whole. But even when Aitmatov deals with the well-known and traditional theme his approach is novel, he gives the conflict a keener edge, considering human life at the breaking point of its contradictions, as the old is overcome in the individual and in his environment, while strictly keeping an eye on the development of his plot, which becomes dynamic, genuinely constructive and a pivot of the whole story determined by the logic of life itself.

Woman's emancipation from the oppression of patriarchal, feudal survivals and her communion with the broad world of education, work, public life and government is the main theme in the literatures of the peoples of Central Asia, Azerbaijan and the Northern Caucasus, which emerged in the earliest period of their formation as literatures of socialist realism. In fact, Soviet writers have invariably focused their attention on this subject.

But Jamilya and Asel, Altynai and Tolgonai were real discoveries for their images tell the readers much more than is expressed directly by what these women say and do in their private life. Aitmatov's characters do not appear to have performed any deeds of heroism, as their contemporaries did in the stories, novels and plays of Aitmatov's predecessors: Djabarly, Aini, Ikrami, Mailin and Seifullin. But Aitmatov showed us such aspects of their inner world and told us so many interesting and fascinating things about the life of the female heart, revealing so much beauty of soul, courage in overcoming difficulties and privations, in asserting woman's human rights in the struggle for them, that one is unwittingly put in mind of another similar episode at a small station in a different country (Tolstoy's

¹³ T. M. Motyleva, *The Foreign Novel Today*, Moscow, 1966, p. 411 (in Russian).

Katyusha Maslova running bare-headed after the moving train in a futile effort to hold on to her trampled youth and love), an episode which is reminiscent of Duishen racked with anguish, as he runs after the moving train carrying his beloved Altynai into a strange new world.

Indeed, Russian and Kirghiz writers dealt with different epochs, different life-stories and dissimilar ethical collisions, and causal relations. But it has to be admitted that their approach to the study of man was largely similar. It is this, perhaps, that produces the proximity of circumstances in the dramatic resolution of the spiritual surge, of which the writer himself is unaware.

Aitmatov achieves a convincing synthesis of his people's aesthetic traditions and those of Russian literature, reflecting in his writings a fundamentally new and higher stage in the interaction of national cultures and literatures, stressing with creative deliberation and aesthetic instinct the high productivity of this interaction.

The Kirghiz critic K. Bobulov has quoted the courageous words of Tugelbay Sydykbekov, who admitted that when he worked on his novel *Ken-Suu* (in the 1930s) he was "half-literate in the full sense of the word". He added: "Even today we are not up to standard, to say nothing of that period. The literary training of the writers of the old generation is roughly the same. One must be objective and frank, for the sage Kirghiz saying runs as follows: 'If you conceal from others an incurable disease, death will reveal the mystery sooner or later'." ¹⁴

However, under the socialist community of national cultures and literatures, which helps to accelerate the natural development of aesthetic thinking and aesthetic structures in the literatures which have lagged historically in their advance, the malaise of low professional standards turned out to be far from mortal, but in fact swiftly and fully curable. In considering Aitmatov's writings, we are put in mind of what Belinsky said concerning the 'fairly banal' topic of Shakespeare's *Othello*. However Belinsky goes on, of the thousand works in world literature on the subject, "the world knows and admires only one *Othello*. This means that content does not lie in external form, not in the concatenation of casual events, but in the writer's intention, in the images, in the play of light and shade and the beauties that he had imagined even before he had taken up his pen, in short, in his creative conception". ¹⁵

Aitmatov's innovation, both compared with the experience of his immediate predecessors in Kirghiz literature and relative to certain tendencies in the development of modern literatures in other republics of Central Asia and Kazakhstan, consists in his creation of a new aesthetic conception of the national character which he elaborates in his works, including one of his most mature, the story *Good-Bye, Gulsary!*

¹⁴ K. Bobulov, *The Ways of Development of Modern Kirghiz Prose*, Frunze, 1969, p. 33.

¹⁵ V. G. Belinsky, *Collected Works in Three Volumes*, Vol. I, Moscow, 1948, p. 577 (in Russian).

One Soviet critic, considering the story *Jamilya*, analyses the elements of the poetics of romanticism and the role of the romantic landscape in Aitmatov's first story, and reaches this conclusion: "What in modern French or Russian literature would have sounded as a long since obsolete phraseological cliché... and would have revealed the author's poor taste in that story unexpectedly has the most natural sound, fresh and—the main thing—simple: as if this particular passage could not have been expressed otherwise. There we find one of the mysteries of accelerated spiritual and literary development! It is capable of renewing the poetics of world literature and of reviving long-forgotten poetical idioms—and pouring them into the mainstream of modern style without any apparent effort."¹⁶

However, the secret of accelerated spiritual and literary development cannot be understood only within the limits of narrow aesthetic categories. This "secret" includes within itself, as a starting point, the accelerated development of society and of its economic and political structures which determine man's status in that society, create the conditions and prerequisites for the individual's spiritual and cultural growth and objectively sustain man's struggle and his efforts to escape from the power of obsolete notions of the world and of himself in that world.

The romantic tones of the poetics of Aitmatov's stories create a link between his writings and the earlier experience in the development of Kirghiz literature, enlarge the limits of understanding of its national specifics, and also our own idea of the modern Kirghiz national character of his hero.

Aitmatov resolutely breaks with schematism and illustrativeness, with the traditions of those writers who are not concerned with human beings as such but with their capacity to illustrate a preset scheme. As one critic put it, Aitmatov "knows nothing beforehand. He looks closely at living man and discovers the general features in the uniquely concrete, in the individual, in character".¹⁷

Aitmatov expends the poetic treasures of his soul and creates an atmosphere in his books so saturated with the poetry of struggle and the poetry of nature in order to depict human characters in all their complexity and contradictory nature, relentlessly fighting bigotry, hypocrisy and demagoguery, wherever and whenever they are expressed. The higher and more subtle the understanding by his heroes of this supreme poetry, the fuller and richer the revelation of their inner world, the more meaningful is life itself.

Trust in man is one of the most effective moral factors helping to shape the character of the whole man. Let us recall how powerfully this topic was expressed in Konstantin Simonov's novel *The Living and the Dead* (1959). In taking up this topic in his own national context, Aitmatov appears to give his lyrical prose the nature of a historico-revolutionary, documentary narrative. Whereas the historical

¹⁶ G. Gachev, *Love, Man, the Epoch. Reflections on the Story "Jamilya"*, Moscow, 1965, p. 22 (in Russian).

¹⁷ V. Kogan, "Nothing 'in General', Notes on Chinghiz Aitmatov's Prose", *Pros-tor*, 1963, No. 5, p. 99.

novelists, starting from the truth of history, of the document, go on to aesthetic generalisation of reality, in Aitmatov's writing the power of aesthetic generalisation, and the historical truth of characters and circumstances produces a picture of reality which gives one the impression of the truth of history documented and analysed by the writer from the standpoint of Soviet man of the 1960s. That is why Aitmatov's works, like *The First Teacher*, and his early story about war, *Face to Face*, could also be seen as writing in the historical plane, because their principal theme is the formation of the new man which takes place in a sharp battle of the ideologies, understanding of life and regularities of the historical process. And while this struggle is carried on along an internal front, territorially confined to no more than one village situated far away from the front lines of the civil war and the Great Patriotic War, this does not make them less significant or less important for an understanding of this country's past, and the men who have created the present.

Man and artist, Aitmatov is shaped in his purposeful urge to express in his writing respect for the common man, toiler and creator.

The path traversed by this common man is hard, painful and frequently contradictory, as he rises to an understanding of the new world outlook, and to active participation in reconstruction of life. Therein, I feel, lies the main meaning of Aitmatov's creative quest, for there he joins in the best traditions of the realistic literature of the 20th century.

The deepening of Aitmatov's realism was most obviously pronounced in his 1966 story *Good-Bye, Gulsary!*. The images of the main characters of this story—Tanabai Bakasov, the shepherd, and Gulsary, the light bay pacer, like those of the other personages show that the author has reached a high level of aesthetic generalisation and typisation. Aitmatov's heroes who have always been free from the preconceptions of set standards, have become more complex, acquiring new dimensions just as modern reality itself, and the conflicts in which man is involved, always having to account to his conscience, and to the ideas and ideals which illumine his life.

But while giving greater stature to his characters and greater complexity to his conflicts, Aitmatov was not prevented from expressing his natural gift for heart-felt warmth and lyricism. While Aitmatov's style may be strictly stern and realistic, *Good-Bye, Gulsary!* is, however paradoxical it may sound, one of his most melodious pieces, which rings with Kirghiz folksongs that permeate it. Even the rhythmical pattern of his phrases making up Tanabai's elegiac monologue—his lament for his pacer Gulsary—conveys the sorrowful and heavy reflections of the old shepherd:

"The pacer Gulsary lay motionless by the camp-fire, his head heavy on the ground. Life was slowly ebbing from his body. There was a gurgling and wheezing in his throat; his eyes, wide open and dimming, stared at the flames; his legs, like sticks, were stiffening.

"Tanabai was taking leave of his pacer, he was saying his last words: 'You were a great steed, Gulsary. You were my friend, Gulsary. You are taking with you the best years of my life, Gulsary. I

shall always remember you, Gulsary. Even now, by your side, I have memories of you, because you are dying, my fine steed, Gulsary. The time will come and we shall meet in the next world. But there I shall never hear the thud of your hooves. In that world there are no roads, there is no ground, there is no grass, there is no life. But as long as I live, you shall not die, because I shall remember about you, Gulsary. For me, the clatter of your hooves will be like a favourite song'.¹⁸

In content and rhythm, in mood and symbol, Tanabai's recitative lamentations remarkably echo the lamentations for the great hunter Karagul, performed to the accompaniment of the *temir-komus* by Jaidar, when she sought to console her husband beset with his adversity. These lamentations are to be found only a few pages apart. We see and feel that in the context of the strictly realistic structure of the narrative, the poetics of the folksong and its melodics are capable of giving expression to the national peculiarity of aesthetic thinking and to give completeness to man's psychological and ethical characteristic.

* * *

However considerable, Aitmatov's aesthetic discoveries do not, of course, cover the whole problem of the creative quest which carries the young Soviet literatures within the range of aesthetic achievements of Soviet and world classics. I feel that Aitmatov's work indicates some lines which lead one to a clear view of the direction of the quest pursued by other writers, and which take one from particular observations and conclusions to those of a more general plane.

I agree with the view expressed by the Azerbaijan critic S. Asadullaev who gave the following characteristic of the new features of the lyrical style in modern Soviet literature: "It is a blend of the concrete and the specific approach to depiction with all the every-day accessories, now and again a fragmentary 'patchiness', an avowed concern in depiction [apparently in contrast to the traditions of the epically objective narrative style—Z. O.] and a profound emotionalism..., on the one hand, and, on the other, a tendency to philosophise and reason about the destiny of men and their country, about moral and ethical problems, and the spiritual improvement of our contemporaries.... These properties of lyrical prose form a special, lyrical type of aesthetic attitude to reality, a lyrical form of reflection of the world through the prism of a personal vision, and accordingly bring to life a new aesthetic structure, a new type of subject and composition, a lyrical poeticism."¹⁹

This conclusion is based mainly on the works of writers like V. Soloukhin, V. Belov, V. Afanasyev, V. Shukshin, Y. Kazakov, and Azerbaijanian lyrical prose-writers like G. Seidbeili, I. Effendiev, S. Veliev and Anar, among others. We find a fairly powerful layer of lyrical narrative running through the other literatures of the USSR as well. Many works by writers in Central Asia, Kazakhstan and the republics of the Northern Caucasus reveal a natural accomplishment

¹⁸ Chinghiz Aitmatov, *Stories*, Moscow, 1970, p. 310 (in Russian).

¹⁹ S. G. Asadullaev, *The Historical Method, the Theory and Typology of Socialist Realism*, Baku, 1969, p. 272.

in mastering the difficult art of conveying the "dialectics of the soul". The first few novels by the Karakalpakian writers A. Begimov, Zh. Aimurzaev and T. Kaipbergenov, which appeared only in the late 1950s, confirm the observation made by E. Lizunova, a student of the history of the Kazakh novel, that there is a fruitful process of transition from the quest for historical and social motifs in the comprehension of reality, past and present, to its psychological comprehension. Let us bear in mind that that was precisely the quality which marked the writings of Mukhtar Auezov, for it was he who "enriched the modern tradition of novel-writing with a plastic depiction of the interpenetrating portrait details in psychological description, and of psychological descriptions in portrait details, that enabled him to reveal the human character at the point where epic generalisations link up with the ramified analysis of the inner worlds of the leading heroes".²⁰

Lizunova deals with the romantic tradition in Kazakh novel-writing, but what she says is also true with respect to other literatures, and not merely those which originated only a short while ago. Among the writers whose works indicate a development and enrichment of innovative traditions connected with the names and works of such leading representatives of the literatures of the Soviet East as Sadridin Aini, Abdullah Kadiri, Djalol Ikrami, and Mukhtar Auezov, we find Abdullah Kahhar, A. Mukhtar and Raschid Raschidov in Uzbek literature, P. Tolis, F. Muhammadiev and Y. Akobirov in Tajik literature, A. Abu-Backar and F. Alieva in Daghestan literature, T. Ahtanov and A. Nurpeisov in Kazakh literature and Ch. Aitmatov, M. Bajiev and O. Sultanov in Kirghiz literature.

In the context of present-day aesthetic quest it is quite natural for the writer to turn to man's inner life and seek to give the fullest picture of his personal life.

For a long time the problem of intruding in the personal life of a hero was a very acute one before Soviet writers, who could rely on the rich traditions of their classics from Pushkin to Leo Tolstoy, from Chekhov and Gorky to Sholokhov and Alexei Tolstoy. But this was a most difficult task to tackle for writers in the young literatures, like those of Central Asia and the republics of the Northern Caucasus, who had to overcome the especially formidable barriers of custom rendered solid by the ages.

However, one needs to draw a distinction between the various customs. One can well understand the young girl Patimat, in Fazu Alieva's novel *The Wind Will Not Blow Away a Clot of Soil* (1967), who takes a reverential attitude to her people's customs, prepared to carry them with her all her life, as her mother, the beautiful Parikhan, and the old farmer Omardada had done before her. Hardly anyone will object to this code of honour:

"If only one Avar has a spark of fire in his hearth, he will pass it on to his neighbour, and from that spark the flames will flare strongly in all the hearths of the village. If only one Avar has a handful of

²⁰ E. V. Lizunova, *The Kazakh Novel Today*, Alma Ata, 1968, p. 160 (in Russian).

flour, he will share it equally with his neighbours so that every family in the village will have a meal of broth. When one is ill, everyone's heart is troubled. If a marriage is celebrated in one home, you will not see any smoke rising over the roofs of other homes."²¹

Man is made stronger and more confident when abiding by such customs, for it is that equipment of the soul which helps man to overcome the long distances he encounters in his long and eventful life. Loyalty to these customs cannot hinder his acquisition of new notions and habits produced by the new epoch with its new views. That is why the image of the vine with its resilient roots spreading through the stubborn soil and tenaciously clinging to it, which Fazu Alieva describes in the opening pages of her novel, is seen as a poetic symbol of lasting importance.

But of course, while reasoning on the reflection in literature of the struggle between the every-day and family, religious, patriarchal and feudal survivals and customs, which have gone or are on the way out, and considering how the character of the new men and women is moulded at the breaking points in this struggle, as they cherish the best national traditions and keep them from oblivion, we should always bear in mind the main point, namely, the correctness of the historical orientation, the prospects of acute ideological struggle, and the regularities of social development.

Let us note that an indicator of the typological correspondence in the development of the literatures of the peoples in the Soviet East is the almost synchronous appearance of works not only with similar topics, but also variously duplicating, specifying and elaborating the problems raised in works marking definite milestones in the development of this or that national literature and confirming the importance and significance of the themes, characters and conflicts discovered by this or that writer.

The search and discoveries of Askad Mukhtar, the Uzbek writer, are undoubtedly appreciated by Kazakh writers who take an interest in similar themes. In his latest novel, *Time in My Destiny*, the writer takes the greatest interest in the inner world of his heroes which he traces out over a fairly long period, almost 40 years. In the development and deepening of the moral and social consciousness of his heroes, a process in no sense straightforward, smooth or free from contradictions and wrestling of the soul, the writer brings out one of the most important aspects of this development and self-cognition of the modern hero. Mukhtar analyses the shaping and expression, together with the social circumstances behind the process, of the internationalist consciousness of his heroes, which determines their behaviour, crystallises their interests and extends their socio-ethical horizons. This sense of internationalism can be judged not only by the fact that Mukhtar's novel is multinational, or even by the fact that his heroes are of different nationalities (Uzbeks, Russians, Turkmens, Ukrainians) who are linked by fine relations entailing business, friend-

²¹ Fazu Alieva, *The Wind Will Not Blow Away a Clot of Soil*, Moscow, 1969, p. 315 (in Russian).

ship and love, relations of soldiers in the front lines, cemented with suffering and blood. I think that the internationalism in the thinking of Mukhtar's heroes has the same meaning with which this word is invested by the old folk poet and singer Suleiman in I. Kapiev's stories entitled *The Poet*. Let us recall these words: "I sing of the Red Army, and the Red Army is one and united in Moscow and in Samarkand.... I sing of the Komsomol—and the Komsomol, whether Georgian or Lak—is the same one.... We all have the same country."²²

In this novel, the psychological analysis is carried out not so much by means of lyrical narration, as in Aitmatov's writings, although the author does not shun lyricism either, as by publicistic means and a straightforward appeal to the writer's contemporaries. These aesthetic means are organically tied in with a panoramic composition, ranging over several broad historical periods, as the heroes move from one reality to another. From Tashkent in the 1930s, the author carries his heroes into the frontlines round Moscow, into the guerrilla detachments operating in the forests, and the concentration camps on the territory of Germany.

The main idea of the novel is that happiness lies in its moral and philosophical, historical and socio-ethical content. That Mukhtar has attained to maturity and has developed a style of his own will be seen from the thematic structure and composition of his novel and the highly acute socio-political range of modern problems which he tackles. In this book, as in other works of modern Uzbek writers, we find an expression of definite regularities marking the tendencies in the development of the literatures of the Soviet East with a task their writers have comprehended from the very outset, the task of being an outpost in the anti-imperialist, anti-colonial struggle. Casting a glance over the past, we find such milestones along the paths and crossroads of this hard struggle as Mamed Said Ordubady's *Misty Tabriz* (1933-1948), Mirza Ibragimov's *The Day Will Come* (1951), Garegin Sevunts's *Tehran* (1952), Mirzo Tursun-zade's *The Voice of Asia* (1954), Khamid Gulyam's *The Continents are not in Slumber* (1960), Kasymaly Bayalinov's *Brotherhood* (1965) and dozens of other equally important novels, poems, verses and plays which are marked by the new, Soviet man in his diverse and dialectically complex intranational and international relations. These works are a record of the process in which man attains to manhood and maturity and is transformed into a personality.

This process, this historically-rooted movement itself, largely rests on the achievements of world realistic art, especially the epochal accomplishments of Leo Tolstoy, whose works are an organic blend of the most refined psychological analysis and great epic narrative. But the diversity and colourfulness of the aesthetic means and stylistic methods used by Soviet writers, rest above all on the sound founda-

²² Effendi Kapiev, *Selected Works*, Moscow, 1959, p. 18 (in Russian).

tion of the Marxist-Leninist outlook, and the aesthetics and poetics of socialist realism.

The basic conflict of our epoch can be expressed in different ways: it can be concentrated in the events of a single week, or shown to develop over a period of decades. The duration in time and diversity of subject and compositional structures constitute a task which is always subordinate to the main problem facing the artist, which is his stand, his specific and general view of events which he analyses in his works.

The history and theory of Soviet multinational literature, even when considered in its individual aspects, confirms the great truth set out in Lenin's thesis which he formulated in the early days of the culture of the new, socialist society: "Not the *invention* of a new proletarian culture, but the *development* of the best models, traditions and results of the *existing* culture, *from the point of view* of the Marxist world outlook and the conditions of life and struggle of the proletariat in the period of its dictatorship."²³

²³ V. I. Lenin, *Collected Works*, Moscow, Vol. 42, p. 217.

The Common and the Specific in the Central Asian Epic

(Problems of Historical Typology and the Evolution of Genres)

It has long been observed that the heroic epics of different Turko-Mongol peoples bear a similarity pronounced enough to enable one to speak of a *Central Asian epic community*. The notion of the inherent unity of the folklore of South Siberia, Central Asia was advanced as early as the 19th century by the Russian scholar G. Potanin (cf. his terms *ordynsky epos* (Epics of the Horde) and "Legend of the Steppe", etc.).¹ Although he was a theoretician, Potanin was an erudite field ethnographer who had travelled over a half of Asia and had first-hand knowledge of local texts in spoken versions. Therefore, his hypothesis seems more than a mere intuitive judgement and deserves a serious consideration.

However, the scholar overemphasised the basic similarity of the folklore material: many (sometimes most) of the parallels he drew between the epic plots and motifs were due to the lack of his understanding of possible typological similarity. Some of his parallels gave rise to fantastic conjectures. The lack of clear-cut criteria for a typological analysis and insufficient attention to specific ethnic features led Potanin to an unjustified extension of the boundaries of the folklore area. (In our view, however, the establishment of such boundaries can be a reliable basis for studying regional cultural communities²).

The Turko-Mongol heroic epic, marked by its internal heterogeneity, possesses many specific features which distinguish it from other ancient and mediaeval folk narratives of Europe and Asia even against the background of common typological features of the heroic epic as a genre. It is beyond the scope of the present work to make a detailed comparative study of examples confirming this proposition. We shall examine chiefly the stratification of the Turko-Mongol epic community in order to determine the range of typological variation within national and regional folklore traditions.

The genesis and spread of the Central Asian epic was accompanied by the consolidation of nomadic tribes into states—a historical process which lasted more than fifteen hundred years. During that time territorial contacts between the neighbouring peoples enhanced their

¹ See G. N. Potanin, *Eastern Motifs in the Mediaeval European Epos*, Moscow, 1899 (in Russian).

² Cf. V. M. Zhirmunsky, "On Internationally Common Tale Plots", *Historico-Phylogological Studies. A Collection of Articles Commemorating the 75th Birthday of Academician N. I. Konrad*, Moscow, 1967, pp. 283-287 (in Russian).

more ancient common contacts stemming from their common origin, linguistic and ethnic affinity.

The formation of the Central Asian epic community is determined by the nomadic way of life. Some relics of that life still lingered in the epic even during its long evolution among the non-nomadic peoples (take, for example, the ancient horsebreeding terminology surviving in Mansi folklore³). But there is a possibility that the roots of that epic community date back to prenomadic times.⁴

Turko-Mongol epic traditions have some peculiar features: the Mongol epic is on the whole more archaic than the Turkic epic; the epic of the Central Asian peoples is typologically more mature than that of the peoples of the Sayan-Altai area, while the epics of the Northern Buryats and Yakuts are very close to each other and provide a picture of Turkic and Mongol folklore at its earliest stage.

On a typological, historical and regional basis one can distinguish three major areas of the Turko-Mongol epic traditions: Western (Central Asian, including poems of the "Oghuz cycle" and the Kalmyk-Oirat epic of Jangar); Eastern (Central Asian) and Northern (Siberian).

The development of the Central Asian Turkic epic into its final form was associated primarily with the consolidation of the ethnic and state formations in the Western province of the Jenghiz Khan Empire, with the expansion of Turkmen tribes in Asia Minor and Transcaucasia, and with the founding of the Ottoman Empire by the Osman Turks. Similarly, the formation of the Oirat tribal union created the political conditions for the emergence of the Kalmyk-Oirat epic. Thus, the "Western epic region" may date back to the 14th-16th centuries.

A typologically earlier stage of the heroic epic is recorded in the Sayan-Altaic folklore. But it is difficult to determine more precisely the time of its genesis, for, like all archaic folklore, the Sayan-Altaic epic lacks historical reminiscences or layers that might suggest any specific period. Still, it is most likely that the Sayan-Altaic epic was composed way back during the formation and disintegration of the Qaghanat of Turks, i. e., before the 6th-8th centuries A. D. This dating is confirmed by, among other things, the parallels between the Altaic and the Central Asian folklore. As is known, the latter is an offshoot of the former (the Altaic community existed during those centuries⁵). The hypothesis that these epics have a quite ancient common birthplace is also supported by the fact that the greater part of Sayan-Altaic and Mongol folklore is set in the Altai.

Oirat folklore and Khalkha tales belong to approximately the same typological formation as the Altaic heroic epics, a feature enabling

³ See V. Chernetsov, *A Collection of Folklore of the Mansi People (the Voguls)*, Leningrad, 1935, "Introduction to the Vogul Tales", pp. 18-19 (in Russian). Cf. also S. Patkanov, *The Type of the Ostiak Epic Hero in Ostiak Bylinas and Heroic Legends*, St. Petersburg, 1891, p. 23 (in Russian).

⁴ See G. M. Vasilevich, "Introduction", *The Historical Folklore of the Evenki. Legends and Tales*, Moscow-Leningrad, 1966, p. 13 (in Russian).

⁵ See V. M. Zhirmunsky, *The Alpamysh Legend and the Bogatyr Tale*, Moscow, 1960 (in Russian); "Introduction to the Study of the 'Manas' Epos", *The Kirghiz Heroic Epos "Manas"*, Moscow, 1961 (in Russian).

them to be included in one group. This grouping appears to be of a very ancient origin.

It is probable that Sien-pi, an ancient Mongol dialect,⁶ was used as an intertribal medium in Central Asia in the 5th century A. D. (it must have functioned as such in the Jujan Qaghanat). The military and administrative terminology in Old Turkic was formed by means of Mongol affixes; the specific role of the Sien-pi culture is reflected in the religious system of the Qaghanat of Turks, an analysis of which has proved it to be of Mongolian origin. Some Mongol elements are likely to have played a considerable role in the ethnogenesis of the Altaic Turks.⁷ These old cultural ties were maintained throughout the subsequent centuries by continuous close contacts until the Altaic peoples became part of the Mongol states formed in this area (the Khakas and the Tuva people for a short period became part of the Altyn-Khans' Mongol state, while other Altaic peoples entered the Oirat tribal union). These facts lead one to believe that the Mongol-Oirat epic was composed approximately at the same time and in the same place as the Altaic epic. One might even infer here evidence of an older folklore community.

The Northern (Siberian) epic region has a somewhat different history. It apparently took shape during the period beginning roughly from the 11th century. This was when the ancestors of the Buryats came from East Mongolia to the Baikal region, partially driving out or partially absorbing the local Turkic people, the Qurykhan. That was probably how the prolonged migration of the Qurykhan to the north started. There the Qurykhan are believed to have formed the ethnic and linguistic substratum of the modern Yakuts.⁸ The resulting creolisation led to the approximation and interaction of the most archaic forms of the Turkic and the Mongol epic.

In our view, this interaction was not only a mere preservation of "living antiquity"; it also brought about a revival of still more archaic (as compared to those of the Central Asian area) layers of folklore. This process seems to be the result of the propinquity of the Turko-Mongols to the Paleoasian, the Samodian and especially the Tungus-Manchu tribes. The latter, too, first migrated to the Baikal region, whence they spread over Siberia. An intensive cultural interaction between these peoples was inevitable due to their close contacts, which, until comparatively recent time, were accompanied by elements of symbiosis and assimilation (e. g., the Turkisation of the Dolghans).

Presumably, the folklore of the Tungus who came to the Baikal was more archaic than Turko-Mongol folklore; there was an affinity

⁶ See L. Ligeti, "The Tabghach—a Dialect of the Sien-pi", *Narody Asii i Afriki*, No. 1, 1969.

⁷ See L. N. Gumilev, *Ancient Turks*, Moscow, 1967, pp. 12, 22-23, 81-82, et. al.

⁸ See A. P. Okladnikov, "Archaeological Data on the Emergence of the First Mongols in the Baikal Area", *The Phylology and History of the Mongol Peoples. In Commemoration of Academician B. Y. Vladimirtsov*, Moscow, 1958, pp. 200-213 (in Russian).

between the two, and this facilitated the creolisation. We have already mentioned the hypothesis which traces the roots of the Turko-Mongol and Tungus-Manchu folklore community to the precattle-breeding epoch.⁹ This does not mean that the Tungus folklore could not have been different before Turko-Mongol influence; the development of certain heroic motifs in the former is due to that influence.

The conservation of archaic forms in Tungus tales can be ascribed to the impact of Paleoasian (and even Paleosiberian) folklore. In this respect, great similarity is observed in Ugric-Samodian folklore, which is likewise characterised by two types of influence as far as the genre and theme are concerned; namely, the influence of the Turko-Mongol heroic epic, and that of the Paleoasian folklore of an incomparably more archaic style, with no trace of the bellicose heroism typical of the Central Asian nomadic epos. Noteworthy in this connection are the two layers in the Mansi (Vogul) folklore; the mythological narratives about Ekwa-Pyrysth¹⁰ that are very close to Paleoasian narratives, and the Mansi heroic tale, influenced by the Turko-Mongol epic. The protagonist of the Tungus narrative sometimes bears indigenous Tungus names—a tradition which enables it to be included in the Central Asian folklore community. Whereas in other stories, such names, synonymous to the Tungus ones, prevail in quite a different setting and are found in the Paleoasiatic (Chukchee and Koryak) equivalents.¹¹

The oldest genre forms of this epic culture are heroic tales, as far as can be judged from the available archaic specimens. The tales embrace two major thematic cycles: the hero's quest for a bride and his fight with a monster or alien.¹² The analysis of cultures of a much later typology has revealed the same basic framework of the heroic tale; the heroic tale may, therefore, be considered the principal narrative form of the Central Asian epic community.

The heroic tale is also to be found among the Ugric-Samodian peoples in the west of the region under examination, and among the Tungus-Manchu in the east. These peoples use the plot scheme of the heroic tale also as a framework to organise their historical tales and legends.¹³ A typological analysis of these texts (mostly heroic tales) helps to determine the proportion of epical features in them: the presence or absence of heroic themes; a full and detailed treatment of

⁹ See G. M. Vasilevich, op. cit., p. 13.

¹⁰ See V. G. Bogoraz, "Foreword" in V. Chernetsov, op. cit., pp. 5-10; E. M. Meletinsky, *The Origin of the Heroic Epos. Early Forms and Archaic Monuments*, Moscow, 1963, pp. 62-65 (in Russian).

¹¹ See G. M. Vasilevich, op. cit., p. 338.

¹² See V. Propp, *The Russian Heroic Epos*, Moscow, 1958, pp. 41-43 (in Russian); E. M. Meletinsky, op. cit., p. 82, et. al.

¹³ See S. Patkanov, *Die Irtysh-Ostjaken und ihre Volkspoesie*. Vol. I-II, 1897-1900, Nos. 1-5 and others; S. Patkanov, op. cit.; *Collection of Papers on the Evenk (Tungus) Folklore*, Leningrad, 1938, Nos. 41, 43, 52, 54, etc. (in Russian); *The Orochi Tales and Myths*, Novosibirsk, 1966, Nos. 18-37; T. I. Petrova, *The Language of the Oroks (Ulta)*, Leningrad, 1967, Nos. 3-8; I. Lopatin, "The Goldy Tales", *Zhivaya starina*, 1916 (Supplement No. 6, 1917).

the plot scheme and descriptions (mostly of single combats); and a mythological representation of inter-tribal and inter-clan confrontations. Apart from the episodes like "the quest for a faraway bride" and "the fight with an alien (monster)", often resembling a marriage trial, elements of genealogical cyclisation, and the motif of blood feud¹⁴ are to be found, for instance, in Eastern Evenki narratives.

The heroic tale, which precedes the heroic epos typologically, has many parallels with Turko-Mongol folklore,¹⁵ possibly because of its direct influence. This circumstance obscures the actual preservation of forms that historically precede the Central Asian epic. In principle, approach that takes into account the natural conservation of the oldest folklore layers is quite permissible. This is borne out by the above-mentioned common system of naming the principal epical characters—a system that apparently dates back to very ancient times.

An interesting example in this respect is the heroic tale *Iangysaq and Qonghyrdjan*, recorded at the opposite end of the Central Asian epic area, among the Yellow Uighurs.¹⁶ There is a striking similarity between its plot scheme and that of some Buryat (Ekhirit-Bulagat) epic poems (for example, *Alamji-Mergen*, *Aidurai-Mergen*). However, as far as can be judged from this badly preserved prose text (the narrative structure of which is barely recognisable), this Uighur tale is closer in genre to heroic tales of the Tungus type rather than to the epos. The parallels in the plot are meaningful; the fact is that before the second half of the 9th century the Qurykhans, who participated in the ethnogenesis of the Buryats, were neighbours of the ancient Uighurs, ancestors of the Yellow Uighurs, both belonging to the same Turkic tribal group in the region south of Lake Baikal and around the Selenga and the Orkhon.¹⁷ All this gives one a deeper insight into the structure of the proto-archaic basis of the archaic epic of the Siberian folklore area.

In the archaic epic of the Yakuts and the Buryats the same subjects are generally found as in the ancient heroic tale and similar genres, like historical tales and legends. But besides epical features—the growing idealisation of hero themes, the emphasis on the collective—there are a number of formal elements that help differentiate the heroic tale from the heroic epos. These are, first, the comparatively greater length of epic poems; second, the musical and metrical structure, rigid in the epic but not so in the heroic tale, whose rhythmic organisation is quite varied, ranging from verse and rhythmical prose to plain prose or prose with verse insertions. The heroic tale

¹⁴ See G. M. Vasilevich, op. cit., pp. 13-17.

¹⁵ Ibid.

¹⁶ It tells of a heroic hunter killed by a many-headed old woman monster and resuscitated by his younger sister, who hid him in the rocks and then found him a bride. In the second part of the tale the sister, too, gets married and gives birth to a child, who meets his uncle during a hunt. A recognition follows, and the families are happily reunited. (See S. E. Malov, *The Language of the Yellow Uighurs. Texts and Translations*, Moscow, 1967, No. 105 (in Russian).

¹⁷ See L. N. Gumilev, *In Search of the Imaginary Kingdom (the "Presbyter John's State" Legend)*, Moscow, 1970, p. 363 (Chart 1) (in Russian).

may be told, recited or sung. The Buryat and Yakut epic poems (*uligers* and *olongkho*), run into fifteen-twenty thousand verse lines.¹⁸ If the genealogical cyclisation of such poems (for example, the Buryat stories about Geser)¹⁹ is taken into account, the number of lines is nearly double this figure (let us recall that the Khanty heroic tale contains about five hundred verses).²⁰

This swelling of the narrative is caused by the constant retardation of action, a typical epic feature. No new plot incidents are added. The laconism of the heroic tale with its rapid succession of events and relatively few descriptions²¹ is replaced in the epic with minute details: the former dynamism is lost in these endless details.

Epic poems like the Yakut *olongkho* and the Buryat *uligers* may be divided into two large groups according to the prevalence of one of these major themes, which are often closely intertwined: the fight with the enemy or the heroic quest for a bride. The first group is centered on the motif of struggle against the enemy, the second on family and marital conflicts,²² typical of the heroic tale. A number of thematic strata may be distinguished in the Buryat *uligers*, which are more heterogeneous and of a later typology. Different Buryat tribes have epics belonging to different formations, which could be classified in accordance with their typological stages with the Unga epic and the Ekhirit-Bulagat epics as the two ultimate stages. In the latter, the plot is based on the quest for a bride; the clan and family themes are presented in a fairy-tale and mythological manner; and the heroic themes are peripheral. The Unga epic consists of two parts: the first part concentrates on family matters, the second is entirely devoted to the heroic battle against the enemy.²³

Certain conclusions are relevant here.

First and foremost, the accentuation is shifted, through aesthetic means, to heroic valour; the central character is transformed correspondingly; he increasingly resembles the *bogatyr*—the type which later finds its highest artistic expression in the “epics of the steppe” of Central Asia. The mythological elements are transferred to the beginning of the story, a process that started already in heroic tale. Finally, a mythological beginning becomes a rule. This is connected, on the one hand, with the distribution of marital and military conflicts between the first and the second incidents of the narrative; on the other hand, a stereotyped mythological beginning forms the first step to-

¹⁸ See G. D. Sanzheev, “The North Buryat Epos”, *Alamzhi Mergen. The Buryat Epos*, Moscow-Leningrad, 1936, p. XIX; G. U. Ergis, “The Yakut Heroic Epos *Olongkho*”, *The Heroic Epos of the Yakuts*, Issue I, Njurgun Bootur. the Swift, Yakutsk, 1947, p. 6; I. V. Pukhov, *The Yakut Heroic Epos “Olongkho”, Principal Characters*, Moscow, 1962, p. 6 (in Russian).

¹⁹ See *Abai Geser-Khubun, An Epopee (Ekhirit-Butagat Version)*, Part I, Ulan-Udeh, 1961; *Abai Geser-Khubun*, Part II, *Oshor Bogdo and Khurin Altai*, Ulan-Udeh, 1964.

²⁰ See S. Patkanov, op. cit., p. 12.

²¹ See G. M. Vasilevich, op. cit., p. 13.

²² See I. V. Pukhov, op. cit., p. 88.

²³ See G. D. Sanzheev, op. cit., pp. XXV-XXIX.

wards a more rigid compositional structure of the epic. Narrative sequences of the hero's childhood and his first exploit are structured into cycles; new adventures appear in the genealogical cycle. All these processes develop to the full in the Central Asian epic.

Unlike the "Siberian epic area" where the archaic epic tradition is best preserved, in some regions of Central Asia the tendencies described above were accompanied by a general decline of the epic tradition: the verse structure partially degenerated and was replaced by a mixed prose-verse form; recitation replaced singing; the poems were sharply shortened (to nearly one-tenth the length of the Yakut and Buryat epic). This decline is especially apparent in the Khalkha epic and certain Altaic traditions.²⁴ It seems to have taken place in the modern period; far greater flourishing of epic poetry in the mediaeval epoch may be surmised, the poetic form being prevalent over the prosaic form and the length of traditional tale being preserved.²⁵

It would be a mistake, however, to regard these processes as mere degradation of the genre, or as a return to the original old forms similar to the heroic tale (although this is true of some cases). For the tendency towards a shorter narrative resulted in the birth of a new genre called the *small form* of the heroic epic (a comparatively short poem with simple plot based on one or two adventures of the hero). Most such poems belong to the epic traditions of East Mongolia,²⁶ where the story-teller's repertoire may contain (in the form of separate songs of 500-1,500 verses calculated for one performance) detailed introductory motifs, a description of the hero's surroundings, his headquarters, his tent, horse, his beloved wife (by their function all they are introductory), and, finally, an account of one of the hero's military adventures.

Completed in East Mongolia, the development of the *small epic form* was also observed in other parts of the Central Asian region. Apart from the shortening of the story, some of its episodes were singled out and treated as separate tales complete in themselves. This is especially true of the initial parts, which became ever more independent, as in the Oirat epics.

The recently noted partial deterioration of the Central Asian epic tradition has not touched the Oïrats of North-Western Mongolia, whose epic poetry remains quite glorious.²⁷ Here the Central Asian epic formation has found its fullest expression in the creative work of

²⁴ See N. N. Poppe, "The Khalkha-Mongol Heroic Epos", *Trudy Instituta vostokovedeniya*, XXVI, p. 114; S. V. Jastremsky, "Examples of the Yakut Literature", *Trudy Komissii AN SSSR po izucheniyu Yakutskoi Avtonomnoi Sovetskoi Sotsialisticheskoi Respubliki*, Vol. VII, p. 1; *The Altaic Epos "Kogute"*, Moscow-Leningrad, 1935, pp. 22-23 (in Russian).

²⁵ Cf. P. Khorloo, "Khalkh ardyn tuul 'batüüni ontslog'", *Aman zohiol sudlal*, Ulaanbaatar, 1969, p. 148-153 (*Studia folclorica*, V. VII).

²⁶ Cf. G. Kara, "Chants d'un barde mongol", Budapest, 1970 (*Bibliotheca orientalis Hungarica*, XII).

²⁷ Cf. B. Y. Vladimirtsov, "Foreword", *The Mongol-Oirat Heroic Epos*, Petrograd-Moscow, 1923 (in Russian).

professional singers (*tulchi*). It was Oirat folklore that produced the grandiose epic cycle about Khan Jangar, which was later brought to the Volga banks by the Kalmyks. This process is very similar to the formation of the "classic" epic,²⁸ which later become fully developed in the Turkic epic tradition of Central Asia. We shall give only a few examples drawn from the narrative folklore of Central Asian Turkic peoples.

A splendid example of biographical cyclisation is afforded by the poem about Alpamysh in the Qanghrat epic tradition. The poem must have acquired its final form already among the Uzbeks, by whom it was preserved.²⁹

The Alpamysh poem, compared to other heroic epics, retains the plot scheme of the heroic tale. It is best developed in Uzbek folklore (about 14,000 verses in Fazil Iuldashev's version). It is also known in a shorter form among the Kazakhs and the Karakalpaks (from 2,500 to 3,000 verses).³⁰ This may be regarded as a later transformation of the poem into the "small epic form". The Alpamysh epic dwells at some length on the compelling biographical themes, such as the hero's childhood, his first exploit and his search for a faraway bride. On the other hand, the two adventure cycles (family-marital and heroic) are very important; they are related to the corresponding layers of the archaic epic.

However, the resemblance to archaic narratives is confined to the main plot scheme, which is essentially different: certain ancient elements, placed in a different context of ideas, were re-interpreted as contemporary in the late Middle Ages. This was due largely to the historical situation brought about by the war against the Oirat Union and the resistance to Kalmyk raids (the 15th-17th centuries). Those events are reflected in almost all Central Asian epics. The Kalmyk-Oirat epic about Khan Jangar must also have acquired its final form about that time, though it was influenced by the contemporary events incomparably less than the folklore of Central Asia, and was constructed more along the traditional archaic lines. While in the Turkic classical epic the mythological enemy is represented by a historic foe, in the Jangar epic the image of the enemy is blurred and devoid of historical reality and approximates to the antagonist of the archaic heroic tale.

The Noghai circle of epic poems (the epics of the Kazakhs, Karakalpaks, North Caucasian Noghai, West Siberian and Crimean Tatars) has much in common in poetic style with the Qanghrat folklore tradition. These epics are associated primarily with the dramatic events in the Noghai Horde of the 14th-15th centuries and

²⁸ We deliberately leave aside another great Central Asian epic, the Geser cycle, which became first known in Tibet and thence spread over the whole Mongol-speaking world. It was borrowed by certain Turkic and even Tungus tribes (namely, the Tuva people and Baikal Evenki). All problems connected with the Geser should be discussed separately.

²⁹ See V. M. Zhirmunsky, Kh. T. Zafirov, *The Uzbek Heroic Epos*, Moscow, 1947, p. 70 (in Russian).

³⁰ *Ibid.*, p. 68.

with the characters involved in them: the Khan of the Golden Horde Tokhtamysh, the war leader Edige, Tamerlane and others. The poems are marked by a "historism" that has transformed both the plot and style of the heroic narrative, sometimes even substituting accounts of the characters' attitudes to one other for the traditional marital descriptions.³¹ Other poems, like the Kazakh *Koblandy-batyr*, *Er-Sain* and *Er-Tarkhyn*, remain true to the "classic" pattern of the mediaeval epic. The Noghai and the Qanghrat traditions both have "anti-Kalmyk" themes. In this case the epic developed exclusively in the form of comparatively short songs.

There are different criteria for distinguishing such genre types as the "small epic" or "small epic form". As has been pointed out, the same epic plot may be elaborated at length or presented in short versions. The size of an epic may vary considerably: the longest version may be ten times the size of the shortest one, but the scale and scope of the events and period of time covered remain the same for all the versions in spite of their differing lengths. The division of the plot into single episodes and the detailed treatment of separate fragments lead to their eventual growth into complete stories. The size of the poem is correspondingly shortened. The time it covers is contracted and its total amount remains unchanged despite the epical growth of such "isolated" fragments. Thus the expression "small epic form" may refer to content as well as to formal characteristics. Both trends may become prevalent when the biographic cycle is completed. They usually precede the subsequent grouping of the plot around the epical centre and the epic hero. As a result, the "small forms" ("small" in scope but not in size) appear as fully developed as, and merge together into, larger cycles. One obvious feature of such a cycle is a more or less complete lack of coherence between the separate songs. An example of this is the Kalmyk-Oirat epic about Jangar; in Turkic folklore this type is represented by a collection of Oghuz epic poems, preserved in our time in two manuscript versions.³²

The songs in the Oghuz cycle have complete and coherent plots of their own; they are linked together by the personality of the storyteller, Qorkut, whose name occurs in the finale of every song. Sometimes he, too, acts as a character in the narrative. There are other characters uniting the heterogeneous fragments, above all the "epic sovereign" Baiandur Khan and the "first bogatyr", Salor-Qazan. The general theme of the whole cycle is the Moslem wars against the Christians in Asia Minor and Transcaucasia. The subject matter and the setting point to the 14th-15th centuries as the earliest probable date of the composition of the epic in its "classic" forms. That was the time when Turkmen tribes launched military campaigns and the Ottoman Turks established the Ottoman Empire. Some earlier parts of

³¹ See A. S. Orlov, *The Kazakh Heroic Epos*, Moscow-Leningrad, 1945, p. 128 (in Russian).

³² See *My Grand-dad Qorkut's Book. The Oghuz Heroic Epos*, Moscow-Leningrad, 1962 (in Russian).

the cycle refer to the Turkmen (Seljuk) hegemony in the 11th century in Northern Iran, Southern Asia Minor and Transcaucasia. The roots of the Oghuz epic tradition are traced to the Central Asia of the 9th-10th centuries, where it fuses with the Qupshaq-Noghay (Qunghrat and Manghyt-noghaily) tradition.

One of the central poems of the cycle is the Oghuz version of the Alpamysh epic.³³ Hence a typological comparison is possible between several existing versions of the same Alpamysh plot: one is a lengthy "classic" epic which developed from an expanded biographic background; secondary in relation to it is a small-form epic, and a third one is a short (and more ancient) version incorporated into the larger cycle. Besides, there are other archaic versions of the same plot, which either historically precede the listed versions or result from re-archaisation of the plot.³⁴

These tendencies are fully developed in the great Kirghiz epic about Manas. Its general theme is likewise connected with the anti-Kalmyk wars of the 15th-17th centuries, although there is a possibility of its retaining certain more ancient reminiscences of the Kirghiz (of their clashes with the Kidans in the 10th century and probably even of the war against the Uighurs and the Chinese in the 9th-10th centuries).³⁵

An interesting typological feature is that all transformations of the "classic epic" seem to have taken place simultaneously. In other epic monuments they are either mutually exclusive or differ in depth usually with one of them predominating. The clustering of episodes around an "epic sovereign" (in our case Manas) does not entail his removal to the periphery of the narrative or any decrease of coherence between the separate songs. The cyclisation was biographical at first, later it became genealogical. The original cycle was enlarged with the adventures of Manas's son Semetei and his grandson Seitek.

The tendency towards cyclisation is so powerful that the plot scheme remains very stable and includes, besides the epic songs proper, many pieces of other literary or folklore genres. As a result, the size of the whole cycle increased tremendously (*Manas*, *Semetei* and *Seitek* contain about 250,000, 200,000 and 100,000 verses respectively).³⁶

* * *

Thus, the mediaeval folklore of the Siberian, Central and Middle Asian peoples presents a great diversity of heroic epical forms corresponding to a number of typological stages that range from the archaic tale to the grandiose "classic" epic cycles. This rich variety of folklore

³³ See V. M. Zhirmunsky, *The Alpamysh Legend and the Bogatyr Tale*, pp. 63-84.

³⁴ See *ibid.*, pp. 9-10, also E. M. Meletinsky, *op. cit.*, pp. 365-366.

³⁵ See M. Auezov, "The Kirghiz Heroic Epos 'Manas'", V. M. Zhirmunsky, "Introduction to the Study of the 'Manas' Epos", *The Kirghiz Heroic Epos "Manas"*; E. M. Meletinsky, *op. cit.*, pp. 367-375.

³⁶ See V. M. Zhirmunsky, "Introduction to the Study of the 'Manas' Epos", p. 190.

forms, with its historical development of no less than a thousand years and covering the whole ethnolinguistic area of the Turko-Mongol nomadic world, retains a basic similarity that proves these forms to be an integral circle of inherently related folklore phenomena, whose originality and independence distinguish them from other mediaeval epics of Europe and Asia, notwithstanding all typological points of likeness.

The historico-geographical panorama of this folklore area enables one to examine the development of the natural genre forms in connection with the political history of the Turko-Mongol peoples and with the major stages of their settlement. It also makes it possible to analyse the common features and peculiarities of the epical narrative within the framework of its typological evolution—from its most ancient to its latest stages, beyond which there begin a radical reconstruction of this genre into something qualitatively new.

Ethnographic Investigation of the Peoples of the USSR

The content and concept of the tasks of a science are shaped in a historically coherent process caused by the needs of society. This subject is, above all, a result of scientific tradition and the store of scientific knowledge which has been accumulated. But nowadays changes are also brought about through systems and structural analysis, directed at identifying the tasks of the relevant science, in the complex of cognition problems imposed by practise.

Changes in the overall concept can be traced in any branch of scientific knowledge, but the degree of change varies with the disciplines. Here ethnography* seems to stand out most among the humanities, particularly during the formative years of Soviet ethnography. At that time, there was a tendency to limit ethnographic research to archaic, vestigial phenomena, and another school which regarded ethnography (ethnology, to be more precise) as a sort of super science, which encompassed almost all areas of social activity.

Such different definitions of the subject have, to some extent, survived into the present. This inevitably gives rise to questions about the criteria by which the subject matter and the borders which separate it from related disciplines are determined. The answer that ethnography studies folk culture and life is not satisfactory. The phrase "folk culture" inevitably brings question: how does ethnography differ from such disciplines as, say, the history of folk architecture, folk music, or the study of folklore?

The specific feature of ethnographic and ethnologic research of culture and of whole peoples is sometimes said to be reflected in the method of study, direct observation. But this is also open to question, because other disciplines (folklore, history of art, etc.) also use this method, which is in any case by no means the only method used in ethnography for the study of contemporary peoples.

An opinion was recently voiced in the Soviet press to the effect that the special view ethnography has of its subject is determined by the whole complex of problems. But here the question inevitably arises: what are the criteria for singling out these problems? Since the question is as yet unsolved this leaves possibilities for a random choice of problems.

Meanwhile it is known that the content of a science is not a matter of arbitrary choice and depends, above all, upon the precise identifica-

* In the Soviet Union the term ethnography includes theoretical research, i. e., research usually known in the West as ethnology.

tion of the salient features, within the complex of those which characterise its objective. It is not a matter of a random choice of problems, the choice is determined by specific features in the objective. Inasmuch as in this case, the objective is the ethnos-people. The criteria which determine the content of ethnography lies evidently in typological features characterising it.¹

What are these features? They are undoubtedly the features which identify the ethnic community among other human communities, and among them ethnos is identified by the specific functions which may be called ethnic. These are functions of intra-ethnic integration and of inter-ethnic differentiation. An analysis of ethnic systems reveals such functions to be characteristic of predominatingly stable mass components of everyday (as distinguished from professional) culture and to be reflected in the presence of specific component features which distinguish one ethnos from another. The complex of these features forms the unique image of an ethnos.

So in selecting a point of view upon a research objective, fulfilling these functions, i. e., its specific ethnic nature, should serve as the main reference.

Ethnographers have long employed the criterion of ethnic uniqueness, although the technique has not always been conscious. It is not difficult to trace the effect of this criterion upon Soviet ethnographers' voluntary or involuntary choice of cultural sphere as areas of investigations.

Research in traditional culture forms, which usually have a marked ethnic uniqueness, occupies a position in Soviet ethnography which is most significant. The widely researched history of the peoples of the USSR: agricultural implements, settlements, dwellings, clothes, household utensils, food, etc., is most characteristic in this context.

Contemporary forms of standard material culture are not usually included in the sphere of ethnographic research, because they lack the essential features of ethnic uniqueness. It must, however, be noted that research in traditional material culture by Soviet ethnographers is not confined to elucidating ethnic uniqueness. Since the specific is closely connected with the general, it is natural, that when various aspects of material culture are investigated, investigations should also expose the ethnic features of the relevant phenomena.

A clear notion of the ethnic features, which characterise individual cultural components is best afforded by comparative typological research. It was first attempted in research on the dwellings of peoples in the part of Europe outside the USSR.² The application of this

¹ The problem of the essence and types of ethnos has recently been closely studied by Soviet ethnographers. See V. Kozlov "Concerning the Concept 'Ethnic Community'" in *Population Problems*, Editorial Office "Social Sciences Today", USSR Academy of Sciences (in English, French and Spanish); Y. Bromley "On the Concept of 'Ethnos'". *Theoretical Problems of Ethnography*, Editorial office "Social Sciences Today" (in French and Spanish).

² *Types of Country Dwelling in Europe Outside the USSR*, Moscow, 1968 (in Russian).

method in ethnographic research on the peoples of the USSR is contemplated at present.

Apart from material culture, ethnic individuality is often reflected in the areas of peoples' spiritual life like their art, religious behaviour, morals, traditions, etc., and this to some extent explains the constant attention centered upon them by Soviet ethnography.

Despite the weight of ethnic uniqueness in determining the subject of ethnography, this should not be treated as absolute, as it is in ethnic consciousness, which directly relates ethnos with isolated components of culture. Such stereotypes as the Russian ornament, the Uzbek skull cap, the Ukrainian hut, etc., reflect this ethnic consciousness. But the uniqueness of practically all similar cultural components is also not of an absolute but of a relative nature, for apart from their own specific ethnos they are present in other, particularly in neighbouring peoples. And if the ethnographer extends his research beyond one people he inevitably finds phenomena in other peoples which he had considered as exclusive to a given ethnos. In this way, ethnographic research reveals the cultural community of neighbouring peoples, which in the final analysis, leads up to a comprehensive exposure of a cultural continuity between all the peoples of the world. Ethnographic research on this continuity undoubtedly serves to bring them closer to each other.

This lends special significance to the wide-scale activity, under way in the USSR, in making historico-ethnographic atlases which reveal ethnic features and cultural community and similarity, features formed through ages of similar natural and also economic conditions, common history, close ties and mutual influence. Work on these atlases also widens the outlook of ethnographers, who usually study only one people. One atlas on the peoples of Siberia³ and one on the Russian population in the European part of the USSR⁴ have already been published. The preparation of an atlas of the Western region of the USSR is now being completed. It will include the Baltic republics, Byelorussia, the Ukraine and Moldavia. The first issues of atlases on the peoples of the Caucasus, Middle Asia and Kazakhstan are planned in the current five-year period (1971-1975).

But regardless of the great significance of ethnographic research in the cultural community of peoples, ethnic uniqueness is still the criterion in determining the subject of ethnography. This uniqueness serves as a touchstone in selecting the subject of ethnographic research. In this respect, it is indicative that in contemporary conditions the transition of ethnic uniqueness from the sphere of the material to that of spiritual culture is regarded as a tendency towards the disappearance of the very subject of ethnography. The concept of ethnography as the science of ethnos, leaves no place for such pessimistic prospects. For as long as the ethnoi-peoples exist, ethnography remains not only as a historical research but also as research on a living reality. There is merely a change in the significance of the area of

³ *Historico-Ethnographic Atlas of Siberia*, Moscow-Leningrad, 1961.

⁴ *The Russians. Historico-Ethnographic Atlas*, Moscow, 1967.

ethnological research in line with the shift of ethnic uniqueness in the spheres of culture. This renders out-of-date all concepts treating ethnography as a science dealing exclusively with vestigial phenomena and describing preferably archaic forms of life and culture.

Research in contemporary reality has long been considered one of the main problems of Soviet ethnography. Work began in this field in the '20s in connection with the practical problems of reconstructing the formerly backward periphery of the country and with the collectivisation of the agricultural regions. By the end of the '30s this activity had almost ceased and ethnographic effort was turned mostly towards archaic material. Ethnographic research in the culture and life of the peoples of the USSR, renewed in the '40s was first mostly descriptive. It widened at the end of the '50s and in the early '60s. Monographs were published on the peasant life of the Russians, Tajiks, Uzbeks, Ukrainians, Latvians, Kirghiz and other peoples of the Soviet Union.

Research widened gradually, and the first task undertaken was a study in the life of workers and, eventually, the entire urban population.⁵ A specifically ethnographic approach to contemporary life culture finally took shape when the tradition-innovation relationship view became established. One of the priorities in the current five-year plan is a further work on the traditional culture and contemporary life of the peoples of the USSR. This is a large subject which includes study of production and art traditions, traditions connected with rites and customs, some of which are rather negative survivals which lead to control problems. Soviet ethnographers have been working on these subjects for some time, but usually in some degree of isolation and lacking in coordination. This pertains more to the elaboration of recommendations and putting them into practice than to research itself.

The last decade has shown a marked increase in the research of contemporary ethnic processes, i. e., the changes in the ethnos as a system, and the last five years saw a great deal of attention centered on these problems at the Institute of Ethnography, USSR Academy of Sciences. Collective monographs on ethnic processes in Europe, the countries of Central Asia and Canada have been published. Books on contemporary ethnic processes in the USA, South and South-East Asia are under way. A three-volume survey devoted to ethnic processes in Latin America is on the way. A collective work *Ethnic Processes in the Contemporary World* is scheduled for preparation within the next few years.

The Institute of Ethnography has been, in the recent years, conducting a preparation of a separate collective monograph on contemporary ethnic processes in the USSR. The work showed that the subject required detailed elaboration in the aspect of regions and problems considered, as well as special research in ethnic processes in

⁵ See, for example, L. Anokhina, V. Krupyanskaya, M. Shmelieva, "Mode of Life and Its Change in a Period of Socialist Construction", *Theoretical Problems of Ethnography* (in Russian).

Middle Asia and the Caucasus. It has also become clear that another problem had not received sufficient attention—that of cultural features common to all the peoples of the Soviet Union. In other words, the ethnic aspects in the shaping of a new historical community—the Soviet people. There is no doubt that ethnographers will contribute to the work on this significant task set by the 24th Congress of the CPSU.

Ethnographic research on national consolidation processes in the USSR, where linguistics and census data are employed, is also very interesting. The processes include the end of isolation and seclusion, the fusing of separate kindred ethnic communities into major nations, and the dissolving of small national groups into compact ethnic communities. Research on important ethnic phenomena like nationality, mixed marriages, ethnic self-awareness, native language relationship, bilinguality, etc., have recently made substantial progress.⁶

* * *

In the Soviet Union, as in other countries, ethnography (ethnology) was for a long time considered a branch of geography.⁷ In the discussions of the '20s and the '30s it asserted itself as a relative of history. It is in fact profoundly historical not only in its method, but to a great extent, in its content. The most important part of the science is the so called historic ethnography, including ethnic history and primitive history, where it is also a major component of historical knowledge.

Although ethnography is, on the whole, an historical discipline its area extends beyond history, since history, strictly speaking, deals with the past of society, even though it reaches into the present. Ethnography does not confine itself to the past, it also deals with contemporary peoples, with living, functioning reality. And unlike history, where the elucidation of events involves individuals, ethnography is not concerned with the individual. Hence, the historicism of ethnography implies that the dynamics of its objectives should be treated in terms of stages, and not chronologically. It must also be stated that the wide use of the result of field research, collected through direct observation, renders the sources of ethnography specific.⁸

The birth of new branches of knowledge, the marginal disciplines,

⁶ T. Terentieva, "Identification with Nationality by Youth in Mixed Families", *Sovetskaya etnografiya* (hereafter SE), 1969, No. 3; M. Guboglo, "On the Effect of Population Distribution Upon Language Processes", SE, 1969, No. 5; Y. Bromley, V. Kozlev, "Leninism and the Main Tendencies in Ethnic Processes in the USSR", SE, 1970, No. 1; E. Klementiev, "Language Processes in Karelia", SE, 1971, No. 6; *Realisation of Lenin's Nationalities Policy among Peoples of the North*, Moscow, 1971; M. Guboglo, "Socio-Ethnic Investigation of Bilinguality", SE, 1972, No. 2.

⁷ The ethnographic section has been functioning within the Russian Geographic Society instituted in 1845.

⁸ See Y. Bromley, O. Shkaratan, "On the Relationship of History, Ethnography and Sociology", SE, 1969, No. 3. (See also *Social Sciences*, Moscow, 1970, No. 1).

is characteristic of contemporary development in science, and although this looks like a still further splintering of sciences, it is actually an integration of scientific research, because these marginal disciplines are really bridges across the "no man's land" between sciences.

The fact that ethnos components are linked with the most varied aspects of social life relates ethnography to a whole series of disciplines. Some of them are respectable elders (e. g., ethnic geography and ethnic anthropology), others are still teething. A new research zone is just beginning to grow in the margin between ethnology and sociology. Ethnographic research has shown that the relationships between ethnic and social process require special consideration; for, in the final analysis, they determine ethnic and national development. This ties two problems into one purpose: research into the features of ethnic change of varied social groups and the elucidation of specific processes in various ethnic spheres, in separate ethnoi.

This type of research is concerned with the analysis of general economic indices in the social and cultural development of Soviet republics and their interrelations, as well as with the general consideration of ethnic processes at the level of the individual in general and with inter-ethnic relations in particular. This, in turn, demands special computer-processed mass surveys. Research conducted by the Institute of Ethnography of the USSR Academy of Sciences in the Tatar Republic is one of the first steps in this direction. A book dealing with the results of this research will be released in the nearest future. Investigations on a wider scale along similar lines are contemplated in the current five-year period. They are undertaken to deepen our knowledge of the ethnic aspects of the development and drawing together of nations of the Soviet Union. In 1971, joint ethnosocial research on Moldavia was conducted by Moscow and Kishinev researchers as part of this project. In the summer of 1972 ethnographers and sociologists in Tbilisi took an active part in an analogous investigation. Similar work is planned in the Soviet Baltic republics. A programme of joint research in Soviet Central Asia might also prove very valuable. It seems fitting to emphasise here that ethnosocial research is urgently demanding unified, well coordinated programmes if we are to avoid the risk of dealing with material that cannot be compared.

Ethno-demographers are also being drawn into the research on contemporary ethnic processes, and the problems connected with forecasting the development of ethnic processes in the USSR, can only be solved with the help of ethnosociologists.⁹

The contemporary transition of ethnic uniqueness from the sphere of material to that of spiritual culture makes research in the field of ethnopsychology imperative. These ethnopsychological subjects are touched upon in ethnosociological studies, but the extent of these studies is as yet totally inadequate.

⁹ See V. Pokshishevsky, "Urbanisation and Ethnogeographic Processes", *Population Problems*; S. Bruk, "Ethnographic Processes in the USSR (according to materials of the 1970 census)", *SE*, 1971, No. 4.

The ethnographic study of ethnic processes is not confined to the present day, it covers the whole ethnic history of the peoples. The two periods which are particularly interesting are antiquity and the modern times because these are the periods with the most intensive ethnic changes. Problems of ethnogenesis owe much of their interest to a desire which lives in all peoples to have a clear idea of their origins. This requires detailed investigation, because popular consciousness often tends towards a simplified and one-sided interpretation, which sometimes even penetrates into specific research. It must be borne in mind that these extremely involved problems necessitate an integrated approach, which is consistent with the many decades of research by Soviet ethnographers in cooperation with anthropologists, archaeologists and linguists.

This approach widely applied in the war years has proved most fruitful on the problems of ethnogenesis. It brought the concepts of the origin of many peoples in the USSR much nearer to historical reality than they were two or three decades ago. But, there is still a need for a great deal of research in this area, the more so because there is a steady inflow of new material. A fuller elaboration will require a coordinated effort from workers in a number of sciences, in such effective forms as scientific sessions. The 1969 session on the ethnogenesis of the Bashkir people held in Ufa is an example.¹⁰

Many Soviet ethnographers are working on the historical and cultural characterisation of the peoples of the USSR, particularly in the Union and autonomous republics. Monographs on the ethnographic history of small peoples with no tradition of the written language have a special position in this series. Here only field work can help the ethnographer in reconstructing by retrospection the history of such peoples (although he must, of course, use all available sources, including archaeological sources). A great many peoples in the USSR who formerly had no written language have found their history through the scrupulous work of ethnographers.¹¹

Together with the entire historico-ethnographic study of the peoples of the world, research in the history of primitive society is regarded as of primary importance in Soviet ethnographic science. From the very first steps special attention was paid to primeval history, as a joint effort with archaeology and anthropology. Over the past decades Soviet ethnographers have accumulated and applied a great deal of data which has proved that the tribal system was historically universal. Dual organisation, which is specific to the primitive communal system was proved to have been very widespread. Research into the so called later forms of primitive communal system has made substantial progress: a complicated structure of the

¹⁰ See *Archaeology and Ethnography of Bashkiria. Materials of Symposium on Ethnogenesis of Bashkirs*, IV, Ufa, 1971 (in Russian).

¹¹ B. Larkin, *Orochi*, Moscow, 1964; I. Vdovin, *Historical Sketches on Ethnography of Chukchi*, Leningrad, 1965; V. Pimenov, *Versi*, Moscow-Leningrad, 1965; A. Smolyak, *Ulchi*, Moscow, 1966; L. Khomich, *Nentsi*, Leningrad, 1966; G. Sergeeva, *Archints*, Moscow, 1967; Ch. Taxami, *Nivkhi*, Leningrad, 1967; G. Vasilevich, *Evenki*, Leningrad, 1969.

patriarchal tribe has been identified, typing of the extended big family is under way, and a vast amount of material has been gathered and classified on one of its segments, the so called patronimy.¹²

In the current five-year period ethnographers will devote their research to the decay of the primitive community structure and the birth of class society, a problem of vast social importance.

Research on the problems of the primitive society is closely related to the ethnographic study of archaic forms of social life which survive in the class, and above all in the early class societies. In this context the nomads should be mentioned, particularly the problems of the transition to settled life and the transformation of former nomads in conditions of the Soviet system. Two international seminars under the aegis of UN were held in 1966 and 1969 in Kazakhstan and Kirghizia, for which the ethnographers were largely responsible. But many aspects of the nomad problem, including the relations between the nomads and the settled agricultural population, require further study and discussion.

The postwar years have also seen a growth in critical study of foreign literature in relation to ethnography and of cultural anthropology, ethnology, etc. A series of pertinent analytical papers has been published in periodic editions, and special collections have been released. During the current five-year period the Institute of Ethnography plans to publish comprehensive works *The History of Thought in American Ethnography* and *History of Foreign Ethnography*.

The collection *Ethnological Studies Abroad* shortly to appear contains a survey of some of the concepts of cultural anthropologists and ethnologists from the USA and Western Europe.

Here it is place to note the firm stand of Soviet ethnographers against racialism which often draws on anthropological and ethnographical materials for its arguments. Soviet ethnographers, who did considerable research already in the prewar period, are again doing much in this sphere. In recent years a number of collective works have appeared: *Against Racialism* (1966), *No to Racialism!* (1968), *Peoples Versus Racialism* (1970), the collection *Documents Expose Racialism* (1968). Beginning with 1971, the Yearbook *Races and Peoples* is published.¹³

The Soviet ethnographers' international ties have widened. The 7th and 8th International Congresses in anthropology and ethnography held in Moscow (1964) and in Tokyo and Kyoto (1968) contributed to this quite considerably. Field work abroad is also widening and the cruise of the *Dmitrii Mendeleev*, scientific research ship, is an outstanding example of this. A three-volume survey *Ethnography of the Slavs* is being prepared in cooperation with ethnographers in other socialist countries.

¹² For details see: Y. Bromley, A. Pershits, "F. Engels and Problems of Primitive History", *The Problems of Ethnography and Anthropology in the Light of Scientific Heritage of F. Engels*, Moscow, 1972, pp. 7-35; A. Khazanov, "Principal Ways of the Formation of Classes in Primitive Society", *Theoretical Problems of Ethnography* (all in Russian).

¹³ For review of the Yearbook see *Social Sciences*, 1972, No. 3 (9).

The cognitive significance of historico-ethnographic knowledge led to the publishing of generalised characteristics in the form of surveys, text-books and popular editions by Soviet ethnographers. Among these the publication (completed in 1966) of the 13-volume *Peoples of the World* (18 books) edited by S. Tolstov was an outstanding event. Preparation of a twenty-volume ethno-geographic series "*Countries and Peoples*" has started recently. This will mainly be concerned with the contemporary period.

In conclusion it would be appropriate to add that I have made no attempt at a comprehensive characterisation of ethnography. My main aim has been only to outline some of the most important problems posed to Soviet ethnography by the development of Soviet society, and the practices of socialist construction.

Anthropology and Ethnography

on the Origins of the Chinese *

Recent finds by archaeologists and palaeo-anthropologists suggest that the ancestors of early men (*Archanthropidae*) in Eastern Asia, represented by *Pithecanthropus* in Indonesia and *Sinanthropus* in North China, reached those countries from the west at the beginning of the Pleistocene. The routes by which they spread were probably favourable districts in India and Indochina, where there have been frequent finds of early Palaeolithic stone tools and artifacts, but it is not excluded that archanthropes also used another route passing from Central Asia through modern Sinkiang to the basin of the Hwang-ho (Yellow River). The "western" features in the Early Palaeolithic cultures of Lan Tien, Ko Ho, and Ting Ts'un favour such an alternative.¹

The paucity of bone and cultural remains of early men (*Palaeoanthropidae*) in China makes it difficult to give a conclusive answer to their relationship to early man in other parts of the *Oecumen*, but the intermediate chronological and morphological position of the palaeo-anthropes of Ma Pa, Ch'ang Yang, Ting Ts'un, and the Ordos between *Sinanthropus* and modern men suggest that Neanderthaloids, descendants of the local archanthropes and ancestors of the "new men" (neanthropes) belonging to *Homo sapiens*, also lived in what is now China.

Bone remains of neanthropes that lived during the Late (Upper) Palaeolithic have been found in China in Tse Yang (Szechwan), Liu-kiang, and Lai Pin (Kwangsi-Chuang Autonomous Region), and in Shan Ting Tung, around Chou K'ou Tien, near Peking, the same area where skulls and skeletons of *Sinanthropus* were discovered. Despite the generally weak racial differentiation of all these finds, certain features can be recognised of the Pacific Mongoloids, to whom almost the whole populations of East and South-East Asia belong in later historical periods. The skulls from South China—Tse Yang and Liu-kiang—may be related to the southern group of Pacific Mon-

* This article is an abridged version of work published in Volume 3 of the symposium *Rasy i narody* (Races and Peoples), 1972 (it includes a detailed bibliography).

¹ See Woo Ju-kang and N. Cheboksarov, "On the Continuity of the Development of the Physical Types, Economy and Culture of Men of the Old Stone Age in China", *Sovetskaya ethnografia*, 1959, No. 4; Woo Ju-kang, *Current Anthropology*, 1964, No. 2, pp. 98-101; 1966, No. 1, pp. 83-86.

goloids, transitional to Australoids.² Among the bone remains of Mesolithic times (generally very rare in East Asia), two skulls from Djalai Nor in Inner Mongolia belong to Continental Mongoloids, while the skulls from Thampong (Upper Laos) and Wuinhvan in northern Vietnam belong to the southern group of Pacific Mongoloids; in the last-named there are many quite sharply expressed Australoid traits. Australoids are represented in the Late Palaeolithic and Mesolithic by bone remains in more southerly countries, for example by skulls from Vadjac (Java), Niah (Kalimantan), and Aitape (New Guinea).³

Analysis of the palaeo-anthropological and archaeological data on the Palaeolithic and Mesolithic from the territory of modern China and neighbouring countries on the whole confirms that East Asia, populated by the oldest hominids, had already, in the first half of the Pleistocene, become a region of uninterrupted socio-economic and cultural development of human groups simultaneously with their progressive evolution from archanthropes through palaeanthropes to men of the modern type.

Many Soviet scholars—V. Alexeyev, A. Zubov, and the authors of this article—think it possible that there were two main foci of sapientation and race formation in the Old Stone Age, namely a Western (Atlantic-Mediterranean) centre where the ancestors of Negroids and Europeoids developed, and a Pacific centre in which the early Mongoloids, and possibly the Australoids, evolved.⁴

There are hardly any anthropologic finds for the long period from the end of the Palaeolithic and Mesolithic to the developed Neolithic in China and neighbouring countries. Only at the end of the Neolithic does the picture begin to change. In the fourth and third millennia B. C. a whole series of highly developed Neolithic cultures was formed, the most clearly expressed being the Yang Shan culture (so called from the site in Honan).

The Yang Shao-Lung Shan tribes,⁵ who constituted a proto-Chinese ethno-linguistic community, lived in what are now the provinces of Honan, Shansi (south), Shensi, and Kansu (east), and were mainly occupied in hoe (hand) cultivation. They knew how to make fired reddish pottery—with polychrome decoration (in Yang Shao) and a dark grey, unpainted ware, cord-marked or incised with a chequered or wickerwork pattern—and also, apparently hemp-fibre cloth. Hunting, fishing, and food-gathering played a subsidiary role in their economy. The Yang Shao way of life was settled. Comparison of

² See Chang Kwang-chin, "New Evidence on Fossil Man in China", *Science*, 1962, Vol. 136, No. 3518, pp. 749-760; and Woo Ju-kang, "Human Fossils Found in Liu-kiang, Kwangsi, China", *Vertebrata Palasiatica*, 1959, No. 3, pp. 109-118.

³ *The Peoples of Eastern Asia*, Moscow-Leningrad, 1965, pp. 36-75 (in Russian); *The Peoples of South-East Asia*, Moscow, 1966, pp. 23-64 (in Russian).

⁴ N. Cheboksarov (sic), A. Zubov, "Vital Problems of the Ethnic Anthropology of India", *XXVI International Congress of Orientalists. Papers Presented by the USSR Delegation*, Moscow, 1970, pp. 1-18; N. Cheboksarov, I. Cheboksarova, *Peoples, Races and Cultures*, Moscow, 1971, pp. 139-146 (in Russian).

⁵ Lung Shan in Honan is referred to here; the classical Lung Shan (in Shantung) has no links with the remote ancestors of the Chinese.

the houses of Neolithic times in the areas of the Yang Shao-Lung Shan complex gives grounds for suggesting that it was in the third millenium B. C. that the particular type of house that can be called East-Asian began to take shape. Eberhard considered that proto-Tungusic tribes lived to the north-east of the area inhabited by the Yang Shao-Lung Shan tribes in the third and second millenia B. C., proto-Turkish tribes to the north-west, Tibetan tribes to the south-east, and Thai-Yueh tribes to the south; but it is impossible to accept his statement that these tribes played the most important role in the formation of the Neolithic cultures of Yang Shao and Lung Shan. The interaction of cultures, however significant, is no ground for Eberhard's conclusions. It would seem more justified to speak of the autochthonous development of the population and its culture, a statement for which the anthropological data provide the main evidence.

Bone remains of the bearers of the Yang Shao culture were found during J. G. Andersson's excavations in Kansu and Honan, and were described by Davidson Black in a special monograph. New material has been obtained from burials of the same period in Pao Chi, Pan P'o Ts'un, and Hoah Sian (Shensi) and have been studied by Yan In and other Chinese anthropologists.⁶ In most of the Yang Shao skulls all the characteristic features of the East Asian group of Pacific Mongoloids are to be found, and they very closely resemble modern North Chinese craniological series. In addition, skulls from the Wei-ho basin have several peculiarities relating them to ancient and modern populations of Southern Mongoloids, who (as already noted) have certain Australoid features.

At the same time the anthropological differences between the 'proto-Chinese' groups of Davidson Black and Yan In exhibit the same trend as the differences between the Europeoid and Mongoloid races. Without questioning the placing of the Yang Shao people among the Pacific Mongoloids, aboriginal to East Asia, it can still be suggested that, on the north-west fringes of the area settled by proto-Chinese tribes, there was a mixing with Europeoid racial components of some sort that had penetrated the Kwang-ho basin from Central Asia along a broad steppe route through modern Sinkiang and the Uighur Autonomous District of the Chinese People's Republic. It is very probable that the introduction of Europeoid racial elements among proto-Chinese tribes was brought about by the west-east migration of actual populations, most probably speaking ancient Iranian or Tocharian.

Thus all the main racial groups now existing in modern China and neighbouring countries had already developed several thousand years ago. In the southern areas of this part of the *Oecumen*, probably along the watershed of the Yangtze and Hwang-ho rivers, Southern Mongoloids were settled, transitional to Australoids; on its western borders various Europeoid populations were living, penetrating eastward into

⁶ See *Palaeontologia Sinica*, Ser. D. 1928, No. 6, fasc. 1; *Paleovertebrata et Paleanthropologia*, 1960, No. 3, pp. 33-34; *Kaogu*, 1960, No. 9, pp. 36-47; *Kaogu Hweipao*, 1962, No. 2, pp. 85-104.

Kansu and Honan, while Continental Mongoloids lived on the northern boundaries, moving eastward to the Greater Khingan and southward to the Ordos and the Alashan mountains. All North China, and parts of Central China, were occupied by East Mongoloid populations, whose area of settlement included Tibet in the west and Manchuria and North Korea to the north-east. It is very probable that most of the Tibeto-Chinese peoples of modern China (including the Tibetans proper, other Tibeto-Burman ethnic groups, and finally the Chinese, or Hans, whose cradle is most likely the area of distribution of the Yang Shao culture) were formed from these populations, which constituted a northern group of Pacific Mongoloids. Apart from skeletons linked with the Yang Shao culture, fossil remains from burials of the Shang (Yin) period, and from graves of the 5th to 2nd centuries B. C. in eastern districts of Inner Mongolia,⁷ also belong to the North China, East Mongoloid racial type.

While recognising, on the whole, the autochthonous character of the Yang Shao-Lung Shan culture, special mention must be made of the links between the aboriginal population and alien components. Analysis of the excavated burials in Pan P'o Ts'un provides evidence of western components among the Neolithic inhabitants of this region (whether alien elements or assimilated neighbouring tribes). The position of the bodies in burials of the Yang Shao-Lung Shan period suggests that the country of the interred people lay to the west. The Yang Shao and Lung Shan peoples were animists, and an agricultural cult of the Mother-Earth was of great significance among them. The cults and rituals of the early tribes had features linked with totem worship, and reflections of totemistic notions can be found in Yang Shao decoration. Another fact deserving attention is that representations of one and the same animal are found in only one, or neighbouring, settlements, figures of fish being the most clearly expressed anthropomorphical signs, a circumstance that supports the idea of a connection between them and the totem of the group living in that locality. Each tribe apparently had its own local self-awareness or consciousness and differed from the others, albeit slightly, in culture and language.

In Honan there is a cultural layer between the Lung Shan and Shang (Yin) cultures, which may be provisionally identified with the culture of the Hsia period. The populations of the third and second millennia B. C. had certain cultural complexes in common, namely, reaping knives or sickles with holes, tripods with hollow legs, cord-markings, etc. Analysis of the semantics of the decoration of Yang Shao pottery also supports continuity of the culture in this area during the third and second millennia B. C.

Beginning, apparently, with the second millenium B. C., an ancient Chinese ethnic community with a Hsia Ethnonym begins to take shape. The Hsia people distinguished themselves from the eastern and southern Man, western Zhun, and northern Ti. The archaeological

⁷ See *Vertebrata Palasiatica*, 1959, Vol. III, No. 4, pp. 183-186; *Archaeologia Orientalis*, Ser. A. Vol. 1938, pp. 1-24.

evidence indicates links between the Lung Shan and Yin cultures, since Yin layers are almost found above Lung Shan ones. The link is also supported by the shape of the pottery vessels and the use of bones for divination.

The Yin people in the narrow meaning of the term (or Shang as they called themselves) in fact lived in a quite small area of the modern province of Honan, while the Yin in the broadest sense of the term were the whole population living on the territory from the western part of the province of Shantung to Shensi in the east, covering the south of Hopei and Honan, and the greater part of Shensi.

In the east of modern China lived northern groups of the Yueh, later assimilated by the Chinese. Evidence of the non-Chinese pattern of their culture is classical Lung Shan, finds of extracted teeth (which was characteristic of the Yueh), etc. The Yin people also embraced non-Chinese I, Hsing, Yui, and Chang tribes.⁸ It may also be that the Chou tribes were non-Chinese. Thus various ethnic components were involved in the evolution of the early Chinese in Yin (Shang) times.

Agriculture developed progressively among the Yin. Bone inscriptions provide evidence of the cultivation of two strains of millet, rice, and hemp; and there were stone reaping knives. The Yin people had water buffaloes, sheep, and horses. A pictogram of a house has been found in Yin inscriptions. The dwelling was of post construction, completely on the surface. The main article of dress was a double-breasted type of long robe. Generally speaking, the culture of the Yin period had a southern character. Mastery of the art of casting bronze was of tremendous significance for the evolution of early Chinese civilisation.

The process of class division begins in Yin society. Social inequality was already known, and a state was formed from the union of tribes. The Yin tribes apparently had wide contacts with neighbouring tribes (borrowing rice and the water buffalo from southern aborigines, and the horse and sheep from northern-west nomads; and if not borrowing bronze working, then at least perfecting it and so on). Although Yin China was a major centre of agriculture in the East, it was not itself the earliest centre, and some scholars consider that Chinese arable cultivation came from the west.⁹

The cult of the Earth, or fertility cult, continued to hold a major place among the Yin, but the main rituals were now performed in honour of the supreme deity Shang Ti, to whom all spirits were subordinated. After death Yin kings (Wangs) received the honorary title of Ti, being thus put on the same rank with Shang Ti, who was considered their ancestor. Here we observe a merging of the cults of Shang Ti and dead rulers, i. e., elements of the ancestor cult in a very rudimentary form.

⁸ See M. Kryukov, *Forms of Social Organisation Among the Ancient Chinese*, Moscow, 1967, pp. 58, 59, 64, 65, 68, 69 (in Russian).

⁹ See, for example, L. Vasilyev, *Origin of Ancient Chinese Bronze and the Ethnocultural Links of the Yin Dynasty*, Moscow, 1964 (in Russian).

The Yin coalition was not stable, which of necessity affected the course of ethnic processes. The Yin culture did not evolve as a single, integral whole, although many elements of early Chinese culture originated then.

The Yin people were still not Chinese in the modern sense of the word, but a Yin ethnos, whose culture, however, formed the main stratum in the ethnogenesis of the Chinese and their culture.

The great cultural achievement of this period, which from its inception exerted a major influence on the formation of the early Chinese ethnos, was undoubtedly the development of writing.

During the Chou Dynasty (11th to 3rd centuries B. C.), there was a significant extension of the ethnic territory of the early Chinese. During the 11th to 8th centuries B. C. they mainly occupied the area of the central course of the Hwang-ho, but in the 8th to 3rd centuries they had already conquered East and Central China.

The basis on which early Chinese unity (Hua, as they called themselves) took shape now became the Yin-Chou tribes, especially those in the middle course of the Hwang-ho, who began to call themselves Chung-kuo, i. e., the Middle State.

The Hua successfully assimilated the "barbarians of the four countries of the world", though not to the same degree in the different districts (less in the north and west, more in the south and especially in the east). In Chou times rice was widely cultivated in the basin of the Hwang-ho, though its home lies to the south of the Yangtze. Wheat was apparently brought from Central Asia, but there is no mention of it in inscriptions of Yin times and no archaeological evidence of it.

The production of lacquer, which developed in the 5th to 3rd centuries B. C., is of southern origin. Hieroglyphic writing, bronze, etc., penetrated southward. The zone of contact between the early Chinese and the aborigines was originally the basin of the Yangtze (the predominantly Tibetan Pa and Shu kingdoms on the upper course of the Yangtze and in the modern province of Szechwan) and the Yan kingdom in the north of modern Hupeh; and also the Thai states of Chu (on the middle Yangtze) and Wu and Yueh (on the lower Yangtze).

Progressive development of the productive forces, especially from the 5th century B.C., when iron articles began to appear, encouraged consolidation of the early Chinese. The introduction of iron brought about a complete revolution in agriculture: there was a transition (from hoe culture) to arable tillage, ploughs with metal shares began to be used with oxen and water buffaloes as draught animals; and irrigation was developed. The transition to arable farming with ploughs brought about a considerable increase in the size of the Chinese population, while the growth of commodity-money relations, and the consolidation of private ownership led to class differentiation. The role of the small family in the life of early Chinese society increased greatly, being much more active and mobile than the big family; this also had its effect on migration, and in the end on the ethnic history both of the early Chinese themselves and of the peoples of Chou China.

There is also a definite genetic link between the earlier periods and Chou times in the sphere of religion. The cult of Heaven now took priority, maintained on Earth by the Emperor as the Son of Heaven. The cult of Shang Ti gradually lost its significance and was more and more absorbed into the ancestor cults both of the rulers and of the most varied social strata of the Chou people. The role of the Earth deity shrank still further, and it was gradually converted into the protector of a given territory and of the harvest. The cult of the dragon became quite common; it arose from legends of water and rain spirits that fertilized the earth, legends apparently of southern provenance. In the Chou period, as before, many plants and trees were venerated, the peach already as the symbol of immortality, the pine of longevity, and the pomegranate as a wish for numerous descendants according to the number of seeds.

In Chou times there was a quantitative accumulation of cultural values, which were disseminated unevenly in depth and area among the early Chinese. In the middle of the first millennium B. C. Confucianism took shape as an ethical and moral doctrine, initially in the early Chinese kingdoms. From the time of the Eastern Chou dynasty the myths of peoples coming within the cultural orbit of the Chinese began to be written down in Chinese. The cultural contacts between the early ethnic groups find reflection in them. Writing became more and more common.

In spite of the intensity of the ethnic processes taking place, Yin-Chou unity passed through a critical period during the Chou Dynasty. It broadened its ethnic territory but the degree to which the aborigines were assimilated was uneven; and the process was complicated by the absence of actual state unity. The early Chinese ethnos, divided territorially, culturally, and linguistically, experienced a turning point in its history.

The period of the first centralised states on the territory of China (3rd century B. C. to 3rd century A. D.), the Ch'in, and especially the Han, states, shaped the Chinese ethnos, giving it first the name Ch'in, and subsequently Han. The Hans conquered a vast territory from southern Manchuria and the Hunnish periphery in the north to Vietnam in the south, from the Tibetan settlements in Kansu, Chinghai, and Szechwan in the west to Korea in the north-east. The extent to which that territory was consolidated was certainly uneven. Thus, while Central China was already Chinese, there were still only Chinese settlements and garrisons in the southern areas. It would seem that Malays and Polynesians lived in the south-east of modern China (in Fukien) in the last centuries B. C., and early Thais in the south (Kwangtung), still broadly unaffected by the cultural assimilation and preserving the aborigines' own distinctive culture. In the north-west, at the end of the 2nd century B. C., the Huns were routed and driven from the territory of the modern province of Kansu and the Ordos, while any groups that remained were quite quickly assimilated. Thus, during the Han period, the Chinese came into direct contact (including ethno-cultural contact) with neighbouring peoples and settled among them. The processes of assimilation took on a broad character.

The measures taken by the Ch'in and Han central authorities (the introduction of administrative divisions; the creation of a single monetary system and system of weights and measures; the building of new state roads, and so on) had a positive effect on the consolidation of the Chinese people and on strengthening the processes of assimilation. Contacts with neighbouring peoples also had a certain effect. In Han times new crops were cultivated, viz., peas, beans, grapes, and melons from Central Asia, oil seeds (sesame and safflower) from India, and silk from the regions south of the Yangtze. The effect of the "Great Silk Route" in particular should be noted.

In this period, too, tea appeared in China, without which Chinese life is unimaginable today. These cultural innovations in various spheres of economic and daily life enriched and diversified Chinese culture, but all became organically interwoven into the fabric of the traditional culture and gradually became an integral part of it. Thus, in particular, through cultural contacts with cattle-herding neighbours, wide, shapeless trousers were adopted in Han dress, worn under a long robe fastened on the right.

In the Han period, too, the traditional Chinese house evolved. Unfired and burnt brick were widely used in building. Then, too, the Chinese pattern of foodstuffs was in the main established, the basic diet consisting of cereals (whole grain or flour) with meat, fish, and vegetables as garnishes and seasoning.

The economy, developing within the framework of a single state, had an accelerating effect on the formation of the Chinese ethnoses in spite of the existence of regional centres. The old handicrafts continued and were expanded, and new ones developed.

In this period the main spiritual values of the Chinese also took shape. Because of its influence on their whole subsequent ethnic development, we must primarily single out Confucianism, which became the state ideology in Han times and so exerted a determining effect on Chinese consciousness as well as having an immense effect on the shaping of Chinese culture. "It was in Han times that the concepts of 'Confucianism' and 'Chinese' began to be almost synonymous. Confucianism became a way of life, a form of organisation of human relationships, and an arbiter of manners in thinking, speech, and conduct."¹⁰

"A striving for generalisation, and for a distinctive way of handing down the heritage of the past and developing standards of social and state life on that basis" was characteristic of Han China.¹¹ Ssu-ma Ch'ien wrote his famous *Shih Chih* (Historian's Records) then.

In the early centuries A. D. Buddhism reached Han China from India via the Western Territory, and quickly spread throughout the country. With it was introduced the cult of the lion (in China lions took on the significance almost of a symbol of Buddhism); statues of

¹⁰ L. Vasilyev, *Cults, Religions and Traditions in China*, Moscow, 1970, pp. 172-173 (in Russian).

¹¹ N. Konrad, "A Short Essay on the History of Chinese Literature", *Chinese Literature*, Moscow, 1959, Vol. 1, p. 13 (in Russian).

lions were set up at the entrances to palaces and even to private houses. The lotus, too, became a sacred flower then for the Chinese as for all Buddhists. It was also in this period that Taoism took shape as a religion. The spread of Buddhism and Taoism had a certain effect on spiritual culture. The dragon became the symbol of the Emperor during the Han Dynasty, and because of that became accepted as the symbol of all China, ruled by the Son of Heaven.

Many of the religions existing much earlier were consolidated in Han rituals. Thus the cult of the peach found expression in the wedding ceremony, during which the bride was given a spray of peach blossom. And as a result of cultural contacts with, and the assimilation by the Hans of, other peoples their myths, legends, and fairy-tales passed into Chinese folklore and enriched it.

The role of writing was greatly enhanced in Han times by the invention of paper. The traditional idea of *sse-pao* (the four jewels) gradually took shape. From the very origin of writing in China a cult of literacy and education began to develop; and from Han times schooling meant primarily training in Confucianism and the meaning of Confucian dogmas. Literate people formed a kind of caste, which was encouraged by the introduction, in the 2nd and 3rd centuries A. D., of a system of state examinations that continued, incidentally, down to 1905.

To sum up, one can say that the Han period was the time when the Chinese ethnos, with a single language, took shape in the regions north of the Yangtze and south of the Great Wall, when the main features of Chinese culture evolved and a single ethnic self-consciousness was consolidated, which found expression in a common name, although regional consciousness, regional connections, etc., were still strong.

By the end of the 2nd century A. D. China had in fact already broken up, and the unification of the country brought about by the Ch'in Empire in 260 A. D. was unstable. Soon the north was conquered by nomads, and at the end of the 4th century A. D. by the Hsianpi.

For nearly three centuries the country was split, but the Chinese ethnos preserved its unity. From the 4th century A. D. one of the greatest migrations in the history of China took place; some estimates put the numbers of the predominantly Chinese population that moved south at 900,000, or an eighth of the total population of the northern districts and one-sixth of the population south of the Yangtze. As a result of this migration of great masses of Chinese, the Hakka (Kochia) dialect of Chinese evolved in the south in the 5th and 6th centuries A. D. Groups of non-Chinese also migrated. The Chinese borrowed a great deal from the local populations of the regions they moved into. In the north, at one time, "Hsianpisation" was strong; the Hsianpi language became widely used even among Chinese, and elements of Hsianpi culture (consumption of milk, ways of baking scones from wheat flour, etc.), but the numerical superiority and cultural predominance of the Chinese population made itself felt in the end and most of the Hsianpi, like some of the Chien, Ti, and

Huns, were finally absorbed into the Chinese medium, while passing on certain of their traditions.

The split in the ethnic development of the country, however, made itself felt right down to the end of the 6th century A. D. and the regionalism always present was very pronounced at that time. Again the direction of ethnic development depended on which tendency—unifying or divisive—triumphed. At the end of the 6th century A. D. China was united (the Sui and T'ang Dynasties). Restoration of the unity of the country was encouraged by ethnic processes (plus other factors) that took the same direction in north and south and consisted in the consolidation and development of the Chinese ethnoses and the ethno-cultural assimilation of the aboriginal population. Right down to the beginning of the second millennium A.D. the territory south of the Yangtze in general formed part of the historical and ethnographic region of South-East Asia, which meant the existence there still of large differences between the economies and cultures of the peoples of South China, including the Chinese who migrated there. In the T'ang period the Kwangtung dialect was formed with a Thai substratum and Chinese superstratum. There are also grounds for supposing that a new Austronesian substratum affected the formation of the Fukien group of dialects. In the T'ang period, as in preceding epochs beginning with the Ch'in and Han dynasties, a policy of *tsan shih*, or "gradual eating into the lands of neighbours in the same way as the silkworm eats leaves" was carried out, that is to say, a policy of systematic forced assimilation of the aborigines by the Chinese who had come to settle down in that area or who had been specially resettled there.¹² Assimilation was not confined solely to the periphery. The local peoples, who had been vanquished, were forcibly resettled in the interior of the country and there underwent assimilation.

Inter-relations with other peoples had a great effect on the ethnic history of the Chinese. Arab merchants traded in the south of China, and some of them lived there for long periods, or even permanently, mixing with the local population (Chinese and Thai), which led to the formation of ethnic groups of Chinese following Islam. Muslim influence also had an effect in the north, where a group of Mussulmen (Huei) evolved on a predominantly Chinese basis.

Towns played a major role in Chinese life and they grew considerably in number in the T'ang period. They were influential cultural centres affecting the cultural life of neighbouring countries as well as of China itself.

The social and economic development of feudal China within the framework of a single state promoted consolidation of ethnic unity. The state employed its forces through a widely ramified bureaucratic apparatus so as to control the most varied aspects of the life of the country—political, economic, and cultural. The system of state examinations, in particular, was given a definite structure, consisting of

¹² See *China and Its Neighbours in Antiquity and the Middle Ages*, Moscow, 1970, p. 5 (in Russian).

three grades, during the T'ang Dynasty. Those who passed the examinations ruled the country and made up the order of *Shenshih* or Confucian scholar-officials. Officials directed the whole life of the district under their charge, making propaganda for, and inculcating, everything Chinese in the Chinese language.

The T'ang Dynasty, a period of considerable growth in the economy and culture, left deep traces in the history of China and the self-awareness and culture of the people. Even many centuries later the Chinese styled themselves *T'angzhen*, i.e., people of the T'ang period.

The unification of the country by the Sung Dynasty encouraged ethnic consolidation of the Chinese. In the first Sung period links between the different parts of the country were extended considerably and trade expanded.

But China also went through a tense moment in its ethnic history in this period that could have been a turning point. In the north-west the Chinese were at war with the Tanguts, some of whom, mainly the urban population and scholarly estate of the defeated Hsia state (1227), were sinicised there, while others were resettled, even in South China, in order to accelerate assimilation.¹³ In the 10th century A. D. the Mongol-speaking Kitans invaded the north-west and later formed their own Liao state; but the Kitan newcomers, through economic and cultural contacts, mixed marriages, etc., were gradually assimilated, though they still represented a major threat to China in the 11th and 12th centuries. It was during the struggle against the Kitans that the Churchens were invited into China; having defeated the Kitans, they conquered the northern part of the country at the beginning of the 12th century, right down to Szechwan in the south-west.

South China remained predominantly under the authority of the Sung. Although many Chinese lived in the South by that time, the processes of ethnic mixing taking place, however, led to the creation of new, mixed groups of Fukien and Kwangtung Chinese as well as to the assimilation of the aborigines. Mixing of the various ethnic groups with the Chinese was stimulated in the south by the rapid economic development of this region and the creation there of large urban centres that were economically influential for their time.

In the T'ang and Sung periods the number of Chinese south of the Yangtze increased considerably; and whereas the number of Chinese living in the south at the beginning of the 7th century A. D. had constituted rather less than 10 per cent of the Chinese in the country, in the 12th century, after the war with the Churchens, they were around 40 per cent. This significant rise in the numbers of Chinese in the south was the result of a mass exodus of Chinese from the north. The development of North China was retarded by the Churchen conquest; but the Churchens themselves, as the more backward people, were gradually sinicised.

Thus, at the end of the 13th century the objective possibility of a

¹³ See E. Kychanov, *Essays in the History of the Tangut State*, Moscow, 1968, pp. 323-324 (in Russian).

splitting of the single Chinese ethnos had arisen; it did not happen, however, since China was united at the time by the foreign Mongol Yüan Dynasty, which was followed by the centralised Ming and Ch'in Empires. The conquest of China by the Mongols and the creation of the Yüan Empire could not break the development of the Chinese cultural tradition. The whole population of the empire was divided into four categories; the first and most privileged consisted of Mongols, the second of other foreigners arriving with them (Persians, Arabs, Kitans, Uighurs, Europeans, etc.), and the third of northern Chinese (who mainly called themselves Hanzhen), while the fourth, with the least rights, comprised the population of South China.

During the Yüan period the regions of the south-west became part of China and a stream of Chinese settlers from the north poured into them. In the south-east the process of assimilating the aborigines continued. The assimilation of non-Chinese peoples was encouraged by the system of governing the regions where they lived, a system (*tu-sse*) that took final shape at this time. The system of collective responsibility (*paochia*) also encouraged a certain degree of consolidation. The formation of the Huitsu (or Hueu) as a branch of the Chinese ethnos following Islam Mohammedanism, took place during this period. The Mongol conquerors were also gradually absorbed into the Chinese.

Although the Yüan Dynasty united the country, the Mongol conquest, which was cruel and brutal in character, in fact retarded its general social and economic development. Under the national Ming Dynasty, however, there was a considerable upsurge of the economy; and elements of capitalism apparently began to evolve then in agriculture and, especially, in the handicraft industries, while the role of the market increased.

The demographic facts indicate that almost half of all Chinese were living south of the Yangtze by the end of the 15th century. In the Ming period considerable masses of Chinese migrated from Fukien to Taiwan. The economic and cultural conquest of Taiwan by the Chinese, and their assimilation of the aborigines, reached its greatest intensity in the first half of the 17th century.

From the 14th to 17th centuries the national-liberation struggle against the Mongols, and the establishment of a national dynasty after a long break, had a great effect on the ethnic consolidation of the Chinese.

Then, for more than 250 years, China found itself under the power of Manchu (Ch'in) rulers who had not only conquered the territory within the Ming boundaries but also extended them. By the end of the 18th century the boundaries of modern China had been, in the main, laid; but the newly acquired territories were weakly held and Chinese hardly migrated to them so that sinicisation had little effect. Under the Ch'in Dynasty Manchuria became part of China, but the process of Chinese colonisation only took on a broad character at the end of the 19th century.

Manchus held a dominant position in the country; at the same time, however, they supported the Chinese' traditional view of them-

selves as superior to the other peoples of China. Chinese traditional culture once more was a powerful factor affecting the conquerors and led largely to their cultural assimilation.

The racial composition of the population of China from the first millennium B. C. to the end of the 19th century in its essentials is unknown to us; but from a comparison of the data on the ethnic anthropology of the modern population, assembled by the writers and other investigators, with the data on the racial affiliation of the ancient populations, it is possible to put forward certain views on the history of the racial structure of the peoples of China in the period under review.

For the northern Chinese of the provinces of Shantung, Hopei, Honan, Shansi, Shensi, and Kansu, an East Mongoloid "North Chinese" type is characteristic, which has general Mongoloid traits (coarse straight black hair; weak development of tertiary hair on the face and body; yellowish skin; a flat face; a developed fold in the upper eyelid, and epicanthus; a low bridge of the nose, etc.) combined with more than average height (166-169 centimetres for adult males), mesocephalia, a very long and comparatively narrow face, and a quite narrow nose.

The other East Mongoloid type, the Korean-Manchurian, is related to the North Chinese type, but is shorter (162-165 centimetres) and brachycephalic; within the boundaries of modern China it predominates among the Chinese and other peoples of Manchuria (the Manchus proper, Sibo, Solons, Dahurs, and Koreans). This type probably evolved through brachycephalisation of the North Chinese type and mixing of the latter with the Continental Mongoloids of neighbouring territories.

On the western fringe of the area of Pacific Mongoloids, among the Tibetans and related peoples of the Chambo (Kam) area and Western Szechwan, an East Tibetan type is distinguished, differing from the North Chinese in greater girth, a shorter skull and wider face, and less marked Mongoloid features of eye and nose. These traits relate the East Tibetan type to the Continental Mongoloids and also give them an "Americanoid" look (resembling American Indians). It may be that we have here the preservation of certain ancient morphological features once common to the ancestors of all the populations of the eastern half of the Asian continent.¹⁴

On the northern, and in places the western, fringes of the area of distribution of Pacific Mongoloids, as we already know, there has been contact with Continental Mongoloids since early antiquity. At present various types of Continental Mongoloids predominate, within the confines of China, among certain of the peoples of Manchuria (the

¹⁴ See *The Peoples of Eastern Asia*, pp. 76-89; N. Cheboksarov, "Main Problems of the Ethnic Anthropology of China", *XXV International Congress of Orientalists. Papers Presented by the USSR Delegation*, Moscow, 1967, pp. 1-20; "Main Phases in the Formation of the Racial Composition of the Population of Eastern Asia", *VII-me Congrès international des sciences anthropologiques et ethnologiques (Moscow, 1964)*, Vol. IX, Moscow, 1970, pp. 253-258; "The Ethnic Anthropology of Eastern Asia", *XI Pacific Science Congress (Tokyo, 1966)*. Institute of Ethnography, USSR Academy of Sciences, Moscow, 1966, pp. 1-15.

Hoche, Orochons, and Evenks), the Mongols of Inner Mongolia and Sinkiang, and many Turkish speaking peoples ethnol (Kirghiz, Kahakhs, etc.). The boundary between the areas of predominantly Pacific and Continental Mongoloids runs across China along the Greater Khingan and the southern margin of the Mongolian Plateau.

The morphological differences between the two main groups of Mongoloid populations are very great; racially the Chinese differ from Mongols as much as Italians from Norwegians. In districts of intermingling of Pacific and Continental Mongoloids there has long been racial mixing resulting from the interaction of Chinese migrating to the north and west and the Tungus-Manchurian, Mongolian, and Turkish peoples penetrating deep into China throughout the whole historical period. In our day Chinese from Shansi and Shensi differ from the natives of other North Chinese provinces in certain North Mongoloid features (marked flattening of the face; a tendency to depigmentation of the iris; prominent cheekbones, etc.). Among the peoples of North-West China, especially in the Ninghsia-Huitzu and Sinkiang-Uighur national districts, the Pacific and Continental Mongoloid types, in addition to being intermixed, are also cross-bred with various Europeoid populations known in the south of Siberia and in Central Asia from the Neolithic and Bronze Ages. The process of inter-racial cross-breeding is clearly reflected in the cave paintings of the famous Tung Huan Caves in Kansu.

At present Pacific Mongoloid types, strongly mixed with various Europeoid components, predominate in all groups of the Huitzu (Dungans), while Continental Mongoloid types are found as an admixture among the Uighurs, who, on the whole, undoubtedly have Europeoid features.

South of the Huai Yan Shan and Ch'in Ling Mountains, in the basin of the Yangtze, and even further south in the basin of the Si-kiang river, and also in the Tsangpo valley in the south of Tibet, racial types of the East Asian group were gradually ousted by the southern type of Pacific Mongoloids. This change can be observed in travelling from north to south in China among both the Chinese and other peoples speaking Tibeto-Burmese, Miao-Yao, and Mon-Khmer languages. From a comparison of natives of North, Central, and South China it is easily noted that many of the characteristic features of Mongoloids become less pronounced as one moves south. Thus the percentage of coarse straight hair falls, growth of the beard is rather heavier, the cheekbones are less prominent, the fold of the upper eyelid is less pronounced, and epicanthus is less common. This "softening" of Mongoloid features is combined with a marked darkening of the skin, a heavy head of wavy hair, a shortening of the face and broadening of the nose (and, accordingly, of the nasal index), a tendency to alveolar prognathism, and a greater development of the external mucosa of the lips. The Chinese themselves easily recognise natives of the northern, central, and southern provinces by physical signs. Taking this variability of the main racial traits into account, the Chinese anthropologist Ch. H. Liu has proposed distinguishing two further anthropological types of Chinese, in addition to the Huang-Ho

(North China) one, namely: a Changkiang (Central China) and a Chukiang (South China) type.¹⁵

The general trend of the anthropological differences between northern, central, and southern Chinese, it is clear, fully corresponds with the differences between the East-Asian and South-Asian populations of Pacific Mongoloids. Comparison of the anthropological data on the modern population of China with that of its ethnic history, leaves no room for doubt that the Chinese (Hans), during their centuries-long migration south, absorbed a considerable number of the Mongoloid-Australoid racial elements, prevailing among the ancient San-Miao and Yueh tribes, ancestors of the modern Miao and Yao, Chuang-tung (Thais), and Tibeto-Burmese, and in part also of the Indonesians, who at the present time also belong to various local types of South Mongoloids transitional (as we know) to Australoids. The central Chinese, and especially the southerners, resemble the neighbouring non-Chinese peoples much more strongly in general racial appearance than they do their fellow-countrymen from the northern districts.

If we now look back and return to the racial composition of the population of China in the Neolithic, Bronze, and Iron Ages, we can say without hesitation that the far-reaching lack of anthropological uniformity among the Chinese themselves, and among the neighbouring non-Chinese peoples of East Asia, increased continuously from antiquity to our day in consequence of migrations and ethnic intermingling, which has always been accompanied with biological cross-breeding. The spread of the Chinese and the genetically related Tibeto-Burmese peoples was mainly linked with extension of the area of habitation of East Mongoloids in a north-south direction right down into Indochina, and in modern times even further into Malaysia and Indonesia. Over all this vast area East Mongoloid populations have interacted with various groups of South Mongoloids, from which the Thai, Miao-Yao, Mon-Khmer, and Indonesian *ethnoi* evolved and separated. These *ethnoi* played a very big part in the social and economic, ethnic and cultural, and racial and biological history of the whole population of South China, including the Chinese themselves. The great morphological, odontological, dermatological, and serological resemblance of the South Chinese to their non-Chinese neighbours reflects this process, which was accompanied with corresponding permanent contacts between populations of varying origin.

Inter-racial relations took a different course on the northern and western frontiers of settlement of the Chinese people. Whereas the boundaries between the areas of predominantly Eastern and Southern Mongoloids were always indistinct in Central and South China, and very mobile, the demarcation line in the north between Pacific and Continental Mongoloids (which, as we know, ran along the Great Khingan and the southern margin of the Mongolian Plateau) remained relatively stable for many centuries. Inter-racial cross-breeding also

¹⁵ See *Zeitschrift für Rassenkunde*, 1937, Vol. 6, No. 2, pp. 129-150.

took place here, of course, but it remained territorially and demographically circumscribed.

Until the middle of the 20th century only comparatively few East Mongoloid Chinese (Han) migrants have penetrated into North and North-West China (Manchuria excepted) and seldom mixed with the aborigines of these districts, who consisted in the main of Continental Mongoloids, and in part (in Sinkiang) of Europeoids. The sharp ethnic and cultural (especially confessional) differences between the Chinese, on the one hand, and the Mongolian, Turkish, and (earlier) Iranian peoples, on the other hand, encouraged ethnic isolation and to some extent prevented inter-racial cross-breeding. The sole exception was the Huitzu, who themselves evolved in a racially extremely mixed environment that included East Mongoloid, North Mongoloid, and Europeoid components. The introduction of Irano-Tocharian elements into the Tibeto-Chinese *ethnoi*, which had already begun in the second and first millennia B. C., had great racial and ethnogenetic consequences, as did the later introduction of Turkish-Mongolian elements, with which, as we know, Europeoid and Continental Mongoloid racial types penetrated deeper into the country, as is to be noted today in all groups of the Huitzu (right down to Hainan and Yunnan), and in certain populations of Chinese themselves (especially in Kansu and Sinkiang).

As already remarked, economic connections were preserved throughout the whole history of China, and an exchange of cultural advances went on continuously. In the 4th to 7th centuries A. D. porcelain was invented, the traditional Chinese *Kuchoa* style of painting developed, and there was a considerable perfection of the art of calligraphy, and so on. The manufacture of porcelain and weaving gradually improved, the production of lacquer-ware and later, from the 13th century, of cloissoné work, flourished. In Ming times colour printing was developed. Many of these achievements became integral elements of Chinese culture and are now accepted as traditional.

In T'ang times the North China type of house took final shape, a building of frame construction, (the cavity between the walls being filled with brick, rammed clay, etc.), with a high, ridged roof covered either with daub and straw or with tiles. From T'ang times a *kang* (stove-bed) became an indispensable feature of every house in the areas north of the Yangtze. Tibetan constructional style considerably influences Chinese architecture, especially that of temples.

Contacts with neighbouring peoples, and, of course, with assimilated groups of aborigines, enriched Chinese cuisine and dress. Traditional Chinese clothing received its modern form only in the 17th and 18th centuries, under Manchu influence.

In the south the Chinese adopted much from the culture of the aborigines (the South China type of plough; houses with a gallery or verandah in front; the outside hearth; broad, slightly conical hats and short trousers; the weaving of cotton and making of batik, and printed cloth, etc.). In the music of South China can be felt the influence of the musics of assimilated peoples. Chinese navigation and shipbuilding were improved under the influence of the aborigines. With the inven-

tion of gunpowder the production of firearms was developed on a considerable scale.

Contacts with neighbouring peoples also had a definite effect on Chinese farming and handicrafts (the cultivation of maize and ground-nuts). Central Asian craftsmen settling in China brought with them the techniques of weaving woolen cloth and carpets, and from the 13th century Central Asian cotton began to be cultivated in Shensi and Shansi.

New and traditional cults, religions, and customs were further developed in China and became an integral part of Chinese spiritual culture. The role of Confucianism remained as great as ever, but Buddhism and Taoism strongly influenced the spiritual life of society, and the Chinese literature of those years developed largely under their influence.

The writers Han Yü, Li Po, Tu Fu, Po Chü-ii, Wan Wei, Liu Tsung-yuan, and others, played a considerable role in the development of Chinese literature, and their work through being widely read, became a factor tending to consolidate common ethnic self-consciousness of the Chinese. In the T'ang period, too, the basic rules of Chinese painting were laid down. The shadow theatre developed, and the theatre became established as an independent art form, the distinctive feature of which was the synthetic character of the performances.

From the 10th century A. D. xylography printing began to spread in China. The dissemination of literacy and printed literature promoted a further consolidation of the Chinese ethnoses and the sinicisation of non-Chinese peoples. Chinese drama developed in Yüan times, evolving differently and not along the same lines in the various parts of the country. The local forms of theatre also differed in language (plays being performed in the various dialects) and in music. In Ming times works appeared without which one cannot imagine Chinese literature and the spiritual life of the Chinese, for example, *San Kuo Chin* (Romance of the Three Kingdoms), *Shui Hu Huan* (All Men Are Brothers), *Hsi Yu Chi* (The Pilgrimage to the West), *Chin, P'ing and Mei* (The Golden Lotus), etc.

In Ch'in times there was a further development of the theatre in its regional variants, through which the Chinese became familiar with subjects previously not known to them, while the non-Chinese peoples acquired Chinese culture. In this period, too, outstanding works were written, such as Woo Ching tzu's *Julin Wai shi* (The Scholars), T'sao Hsueh-ch'ün's *Hung Lou Meng* (Dream of the Red Chamber), P'u Sungling's *Liao Chai Chih yi* (The Strange Tales of Liao-chai), *Chin Ku Ch'i Kuan* (Strange Tales, New and Old), *Ching Hua Yan*, (Flowers in the Mirror), etc.

Dialects played the main role in local intercourse, and their role was enhanced when, at the end of the 19th century, works began to be written in the Shanghai and Kwangchow dialects.

But the spread of written culture was retarded by the low level of literacy (at the end of the 19th century literacy was 4 per cent among males and 0.1 per cent among females). The press was not highly

developed as a means of information. And the state of religion in general remained as before.

China was transformed into a semi-colony during the Ch'ing period. Feudal relationships predominated in the countryside, despite a certain growth of capitalism. The struggle against enslavement of the country by foreign capitalist powers, and against the feeble government of the Manchu Dynasty, stimulated Chinese national consciousness.

In 1911 a republican form of government was established. Although Kuomintang China officially recognised that the country was inhabited by "Hans, Manchus, Mongols, Tibetans, and Mussulmen", it was nevertheless firmly held that all the peoples of China descended from a common ancestor; and a policy of assimilation was justified theoretically as necessary for the rapid formation of the *Kuotzu* (or state nation).

Regional separatism was very pronounced and the language problem was discussed many times. Thus, in 1913, there were conferences between northerners and southerners on a phonetic alphabet, on standards of pronunciation, etc. The northerners won by an insignificant majority only, and the southern dialects of the economically more developed regions continued to preserve a strong position, even creating their own press and literature. In spite of attempts to spread use of *Kuoyui* (the state language), there was no single spoken language, so that *Kuoyui* could not fulfil the function of a basic means of intercourse among Chinese. A counterposing of the various groups of Chinese, along territorial and linguistic lines became quite common.

The struggle against Japanese militarism in the thirties, which took on a national-liberation character became a powerful factor strengthening Chinese unity. During the war large numbers of Chinese were forced to migrate, mainly to the west and south-west. Internal events (above all the fighting in the country) led to a breaking down of old regional barriers.

In the centuries-long history of the Chinese, traditions, while changing, have preserved a certain continuity. From childhood Chinese were educated in respect for traditions, especially those linked with Confucian ethical norms, and understanding of their rich symbolism. It was this devotion to symbols, among other things, that made a Chinese Chinese, while knowledge of this very rich and complex symbolism created the cultural stereotype of a Chinese.

After the establishment of the Chinese People's Republic in 1949 use of the single name "Han" for all Chinese was officially enforced. The constitution proclaimed the equality of all peoples in the country, but during implementation of the policies of the "Great Leap" and the "Cultural Revolution" an intensive policy of sinicisation of the small peoples began to be carried out. And whereas, in the first decade of the Chinese People's Republic, it was officially proclaimed necessary to wage a simultaneous struggle against Chinese Great Power chauvinism and local nationalism, it later began to be only the struggle against local nationalism that was encouraged, under the banner of which there was forced assimilation of the national minorities. According to

some reports nearly 40 million Chinese from the towns have been re-settled in various parts of the country. Many Chinese have been settled in Inner Mongolia, Sinkiang, and Tibet, and in these areas now (except, perhaps, Tibet) the Chinese population predominates. Mixed marriages are encouraged and the education of all children in a Great Han spirit is being carried on in fact as state policy.

The policy of artificially accelerating the consolidation of Chinese national consciousness by means of chauvinistic campaigns, and the forced assimilation of other peoples, are complicating national and state development in the Chinese People's Republic.

Great efforts have been made to unify the language and to disseminate *putunghua* (or common speech), based on northern dialects. But its spread has run into serious difficulties, especially in the south. The state clearly underestimated the complexity of the linguistic situation.¹⁶

From the foregoing review of the anthropological and ethnological data, the following can be stated about the ethnogenesis of the Chinese:

1. The early ancestors of the Chinese evolved in a quite narrow belt along the middle course of the Huang-ho (Yellow River).
2. As they extended their territory, they wholly or partially absorbed neighbouring *ethnoi*, as is indicated by the great role of non-Chinese elements in the evolution of the Chinese from early antiquity.
3. The effect of non-Chinese aboriginal peoples on the formation of local groups of Chinese and of local variants of Chinese culture was always very great.
4. Although the Chinese ethnos and its culture basically took shape in the Han period, it underwent great changes in the many centuries since, not only as the result of the independent development and perfecting of Chinese culture by the Chinese themselves but also through their considerable and permanent ethno-cultural contacts with other peoples.
5. The Chinese ethnos still preserves considerable local differences in culture and language; dialects continue to play a significant role, which is evidence that its evolution is not yet completed.

¹⁶ See M. Safronov, "Linguistic Problems in Chinese Society", *Problemy Dalnego Vostoka*, 1972, No. 1.

The Developing Countries: New Researches

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The Scientific and Technological Revolution and Socio-Economic Problems of the Developing Countries

The impact of the scientific and technological revolution on the former colonies and semi-colonies is a contradictory one. The changes it is working in the productive forces make it difficult for the economies of these areas to approach world standards. Let us note, for example, that countries now have to pay a much higher price for using scientific and technological innovations as compared with preceding periods.

As a result of the scientific and technological revolution, much greater initial capital is needed to organise modern production, the total capital-intensity and the cost of a work place have risen and much higher demands are made as regards the general educational and professional training of the labour force. To keep up with technological progress enormous additional investments have to be made to renew the fixed productive assets. This is because equipment grows obsolete much more quickly than before, and funds are also needed to train and retrain personnel. Where age-old socio-economic backwardness exists it is extremely difficult to find sufficient resources to ensure the organisation (and reorganisation) of production along modern lines. These difficulties are largely due to the fact that a considerable part of the lacking funds must be obtained in the form of foreign currency.

The developing countries are compelled to import most, if not all, of the new equipment and production technologies. At the same time, on the world market their exports, which are practically the only source of paying for their imports, encounter obstacles difficult to surmount, obstacles which are also largely the result of the revolution in science and technology. Among them are first and foremost, the relative drop in demand and a downward trend in prices of raw materials which are predominant in local exports. As a result, between 1955 and 1970 the share of raw materials in world trade has dropped from 50 to 34 per cent, or by almost $\frac{1}{3}$ ¹. The total purchasing power of raw material exports in relation to manufactured goods has also dropped on the world capitalist market. Both these processes are stimulated by a marked decrease in the consumption of material per output unit in the most dynamic industrial branches and by the simultaneous expansion by the industrial countries of the manufacture

¹ UNCTAD. *Handbook of International Trade and Development Statistics*, 1972.

of artificial and synthetic materials which are highly competitive with regard to many natural raw materials.

There is, however, a way out of this situation. Otherwise, the economic and social development of the newly-free countries would stop. That is why the latest scientific and technological achievements must be regarded not so much as additional obstacles to the elimination of the economic gap between the industrial and developing states, but as a potentially powerful lever in the struggle to overcome the economic backwardness of the developing states.

In improving their production facilities, the developing countries can make use of the experience of the industrial states, including the social aspects, and can lean upon the achievements already made in this sphere. The possibility of saving resources and time should be a constant stimulus to the industrially less developed countries when they draw on foreign technological and organisational experience. It is not enough just to want to make the most of this opportunity. Success depends on an intricate set of domestic and foreign circumstances in the agrarian-raw material countries, on conditions determined by the interaction of a multitude of different factors, not only economic, social and technological, but also political, demographic and even cultural. This article looks into the interrelations between some of these factors and the main trends in world scientific and technological progress.

In analysing the factors that make it difficult to bring the developing countries up to world production standards, it should be noted that these are in many respects engendered by the forms and the content of scientific and technological progress. New scientific discoveries and the resultant revolution in engineering and technology are determined mainly, if not solely, by the requirements of the industrial countries. The transplanting of technological schemes and processes, suitable for the conditions in these countries, to a different environment is of necessity a painful process. Moreover, for the above reasons a great many of the latest scientific and technological achievements cannot, for the time being, be used in the newly-free countries, which do not as yet face the problems these achievements are intended to deal with.

The limited general economic potential of the developing countries and the small capacity of the domestic market linked with it, are an obstacle in the way of mastering technically progressive kinds of production, an obstacle which is very difficult to overcome. The direct cause and, at the same time, the consequence of the greater capital-intensity of modern enterprises is the rapid enlargement of the initial scale of economically effective production. In the first half of the 20th century, that is, the period when the scientific and technological revolution was in the stage of inception, the physical volume of production per US manufacturing enterprise grew, as a result of technological progress and the concentration of capital, by an average of some 3 per cent a year.² With the subsequent acceleration of

² See *The Need for an Export-Oriented Pattern of Industrialisation*, Doc. ID/Conf. 1/56, 25.VIII, 1967, p. 11.

technological progress this process was logically also to increase to a considerable extent, and this gave rise to the problem of the incongruity between the many kinds of production, equipped with the latest machinery, and the limited market capacity of the young national states. For example, in five out of the six Central African countries the level of steel consumption is so low that it is insufficient to load a steel plant of minimum capacity.³

The position is aggravated by the fact that, despite the undoubted livening up of business activity and a notable increase in economic growth rates in these countries over the past two decades, the gap between their level of development and that of the major capitalist powers continues to widen. This tendency could be clearly seen even in the sixties, when the rate of economic progress reached its peak in the developing countries (see Table 1).

Growth of the Per Capita GNP (dollars)

Table 1

	1960	1970
Industrial capitalist countries	1,829	2,620
Developing countries	161	205
Africa	129	151
South and East Asia	101	127
West Asia	266	434
Latin America	397	496

Source: *Review of International Trade and Development*, 1971, Doc. TD/B/369, 9.VIII. 1971, Part One, p. 48.

The data in Table 1 show that there is an absolute as well as a relative increase in the gap between the per capita incomes in the industrial capitalist states and those in the developing countries. It is worthy of note that in the sixties the rate of increase in the per capita income in the West Asian developing countries exceeded that in the group of capitalist countries by 1.4 per cent. It should, however, be stressed that the relatively rapid growth in the per capita income in the West Asian countries was achieved mainly by the intensified development of local natural resources, and not by the development of new branches in the economy. The rise in its growth rates was also promoted by the concessions squeezed from foreign monopolies in the distribution of the profits obtained from the exploitation of these resources. The absolute size of the increment of the average per capita income in the West Asian countries was only 21.3 per cent of that in the capitalist countries.

The developing countries find it difficult to attain advanced production standards because, in addition to the traditions which are in sharp conflict with the demands of rapid technological and organisational progress, they also experience a shortage of skilled personnel and lack a smoothly functioning economic mechanism able to ensure an effective and rapid solution to a whole complex of related socio-economic problems. This is a task that is beyond the powers of private enter-

³ *Report of the ECA Mission on Economic Cooperation in Central Africa*, U. N., New York, 1966, pp. 128-129.

prise, especially if the latter has assumed distorted and dependent forms. Centralised, planned management of socio-economic processes in these countries is only in a state of inception.

In view of the above-mentioned facts, it may be considered premature to speak of the connection between socio-economic development in the newly-free countries and the scientific and technological revolution. However, the processes at work there must not be ignored. First, scientific and technological progress is having a many-sided impact on the life of the young states via the world economic and cultural links developed by capitalism. The consumption sphere is the most important conduit of that influence. Secondly, despite all the difficulties encountered, some of the progressive scientific and technological achievements are gradually finding application in production in those countries as well.

Of course, not all the technological and economic changes in the economies of the newly-free countries can be ascribed to the scientific and technological revolution. For example, the replacement of the wooden hoe by a horse-drawn plough, not to mention a tractor plough, is an enormous qualitative leap in the development of the productive forces. But this leap has no direct relation to the achievement of the modern scientific and technological revolution, whose main content, as distinct from the industrial revolution of the 18th century, is the emancipation not of man's muscle power, but of his higher nervous activity. The introduction of these implements should merely be considered as a preliminary step towards the mastery of the achievements of the scientific and technological revolution.

The transition to the iron plough and the tractor does not exhaust technological progress in the agriculture of the developing countries. New high-yielding varieties of grain are being ever more widely introduced in many of them. Artificial fertilisers, insecticides, herbicides and other harvest stimulators are being used as well. Hydrotechnical structures are being set up to ensure the more effective and complete use of the areas under the best seeds. The aggregate of these measures has been called the "green revolution", which cannot be considered in isolation from scientific and technological progress.

Similar changes under the impact of the scientific and technological revolution are also noticeable in the industry of the developing countries. Scientific and technological progress has particularly affected local oil extraction and refining. In some respects, it has also spread to the chemical, iron and steel industries. The oil extracting and, to a certain extent, the oil refining industry are beginning to use, more or less extensively, such a progressive method as continuous production, which raises labour productivity considerably. In Iran, for example, the total number of people employed in the oil extracting and refining industries, at enterprises controlled by the International Oil Consortium has in seven years (from 1961 to 1968) dropped by more than 40 per cent, while the output per worker in the main production operations has increased 3.8-fold in oil extraction and

2-fold in processing.⁴ The principle of continuous production is also being introduced in the local chemical industry.

The use of progressive technological processes is a factor accelerating the growth of the oil refining and petrochemical industries, which has led to a steady rise in their share in industrial production. Between 1948 and 1970 the share of these branches increased in terms of the net industrial output of the whole group of developing countries from 11.2 to 17.1 per cent. In 1970 that share reached 16.9 per cent in the young Asian states and 18 per cent in the Latin American countries.⁵

Modern technological progress also tells on the fuel and power balance in those countries, in which liquid and gaseous fuels generally hold an important place in that balance. In South and South-East Asia, for example, where the role of these fuels is not particularly high, oil and gas account for over 50 per cent of the power consumed and in the whole group of developing countries—over 70 per cent.⁶ At the same time comparatively extensive research is also being conducted in the field of atomic energy. In 1969 there were already 41 atomic reactors in the former colonial and dependent countries. According to the IAEA, the productivity of the atomic power stations in that group of countries may by the beginning of the eighties grow some 40-50 times. As a result, their share in the total output of the local power stations will reach 7-8 per cent, which will be about one half of the expected average world index.

The mastery by the developing countries of the achievements of the scientific and technological revolution generally intensifies the unevenness of their internal economic and social development. The more the national economy of a developing country lags behind present world standards, as regards technological equipment and organisational level, the more unevenly does it develop since the attainment of these standards unfolds the "fan" of the coexisting modes and types of production.

With the small capacity of the internal market and the lack of capital and skilled personnel, the introduction of modern production methods takes place in these countries in the form of separate nuclei in an ocean of small and very small economies of the traditional type. For a long time these nuclei had no direct economic links with the traditional economies and therefore no direct effect on the rate and trend of their restructuring. At the same time, progressive technological processes are being introduced, first and foremost, at enterprises owned by, or operating, as in the above cited example of the Iranian oil industry, under the aegis of foreign monopolies. This often increases the isolation of modern enterprises from the archaic traditional economies and makes them appear as alien infiltrates.

⁴ Calculated according to data in *Annual Review. Iranian Oil Operating Companies*, 1965, 1968.

⁵ Calculated according to data in *Monthly Bulletin of Statistics*, Nov. 1968, pp. XIV-XIX; May 1972, pp. XIV-XIX.

⁶ Calculated according to *UNCTAD. Handbook of Trade and Development Statistics*, 1969, p. 181.

In general, the economic development of the Afro-Asian and Latin American countries is proceeding in two parallel directions in which the leading role of the modern economic sector is generally opposed by the dominant (as regards the scale of employment and the securing of the mass of the population with means of subsistence) position of traditional production. In Kenya, for example, in the mid-sixties, more or less modern forms of production accounted for almost 4/5 of the gross domestic product, while over 3/4 of the gainfully employed population was still engaged in the natural and semi-natural economy.⁷ On one side of the dividing line between the two sectors we often find not small-commodity, but semi-natural economies. As regards means of production the extreme poles—the traditional and modern sectors of the economy—are represented by the wooden hoe and atomic power stations.

This development, along with the sharp stratification according to the class principle, due to the concentration of the means of production in the hands of exploiter groups, leads to large, sometimes vast discrepancies in the incomes of the non-exploiter strata of the local population due to different spheres of labour application and different levels, as regards qualifications and the cost of labour power. As a result, unfavourable tendencies in the development of local effective demand are to be observed in many of the Third World countries on an even wider scale.

The market for manufactured goods is expanding comparatively slowly. Owing to the low income level, foodstuffs make up the predominant part of consumption by the bulk of the population. The consumption by the small part of the well-to-do who account for a considerable, sometimes the basic part of the income, on the other hand, consists of a relatively wide range of commodities, which is growing steadily under the influence of the rapid changes occurring in production and consumption pattern in the industrial countries.

Within certain limits the influence of the "demonstration effect" also tells on the consumption pattern of the poor sectors of the population. This can be seen from the fact that in the most remote corners of the Third World we observe the appearance, first, of European clothing, then bicycles, transistor sets and all the other attributes of modern civilisation. In this case it is not the scattering of consumer demand over a wide range of commodities that is of importance. From the viewpoint of the impact of the latter phenomenon on the reproduction system of greater importance is the fact that it diverts the already meagre resources (for example, those in the small peasant households providing a livelihood for the bulk of the local population) from productive utilisation or reduces consumption of necessities, which find expression first and foremost in a poorer food ration.

The scattering of total effective demand, with the general limita-

⁷ Calculated according to Republic of Kenya, *Development Plan 1966-1970*, Nairobi, 1966, pp. 100-102; *Etude sur l'économie mondiale, 1969-1970. Les pays en voie de développement dans les années 60: comment mesurer les progrès accomplis*. U. N., New York, 1971, p. 16.

tion of its size, while decreasing the need for every individual type of commodity, contracts still further the market on which the local industry producing consumer articles has to rely because of limited export possibilities. For its part, the production of a wide range of consumer goods, organised under the influence of the domestic market, scatters demand for means of production and makes it difficult, and even impossible at times, to manufacture them locally. This applies both to the means and objects of labour, and is particularly evident in the demand for the so called intermediate products represented by the material elements of circulating capital (raw materials, semi-manufactures, component parts and other materials needed for industrial production).

Specialisation and cooperation within the framework of individual industries, proceeding under the impact of modern technological progress, most of all affect intermediate products. In other words, in the specific conditions prevailing in the developing countries a change in the domestic market structure, caused by the introduction of technical and technological innovations, often comes into conflict with the needs and possibilities of a further growth in new industries.

Particularly serious difficulties are encountered during the mastery of technical innovations for production purposes. This is due not only, and not so much, to the comparatively high capital intensity and complexity of technological processes themselves, as to the above-mentioned small capacity of the local market. Successful industrial production requires more capacious markets than those needed for the manufacture of consumer goods. It has been estimated, for example, that to satisfy the requirements of the market for the final product⁸ evaluated at \$4,000 million, an iron and steel works with a capacity of only about 400,000 tons of steel a year⁹ is needed, while for the same purpose at least several big textile mills are required, the equipment for which could also be supplied by a relatively small textile engineering works. The need of the production of the means of production for capacious markets is due also to the fact that the growth of medium-sized plants, attending modern technological progress, above all affects heavy industry.

It therefore seems to us that for most developing countries it is hardly advisable to compare the economic effect obtained from the introduction of technical innovations in branches producing consumer goods with those producing industrial goods. Undoubtedly, efforts linked with the renewal of the production basis are more fruitful than the mastery of purely consumer innovations. However, if new consumer goods are not to be imported, but produced locally, this will inevitably create a need for a certain renewal of the productive facilities as well. After all, the circulation on the market of constant capital, according to Marx, is limited, in the final analysis, by indi-

⁸ Final product includes all finished articles designed for personal, as well as productive, consumption on the domestic market, and also unfinished products (raw materials, semi-manufactures, etc.) intended for export.

⁹ B. A. de Vries, *Export Experiences of Developing Countries*, Washington, 1967, p. 21.

vidual consumption, since constant capital is never produced for its own sake but solely because more of it is needed in spheres of production whose products go into individual consumption.¹⁰ The inverse relation between the production of means of production and the level of consumption was also noted repeatedly by Lenin¹¹.

At the same time, the market for consumer goods is still too narrow in most developing countries to justify the creation of industries to produce the many kinds of means of production needed for the manufacture of such goods. In fact, only in 15 of the hundred countries of that group does effective demand for final product reach or exceed \$4,000 million.¹² As a market for means of production this product, as stated above, plays a minor role. Therefore, the possibility of restructuring the production basis, taking due account of modern scientific and technological achievements, is so far extremely limited in many Third World countries. Moreover, at the present stage of development these achievements are practically unattainable for individual small states, unless cooperation exists between them or with third countries.

A serious factor aggravating the contradiction between the need for and the possibility of developing modern industry in the Asian, African and Latin American countries is the policy of the imperialist monopolies. When the former colonies and semi-colonies won state sovereignty, the magnates of international business began to use new forms and methods in their struggle for local markets. In order to penetrate and gain a foothold in the rapidly expanding markets of the developing countries, the imperialist monopolies increasingly resorted to economic levers, among which investments in the local manufacturing industry hold an important place. Thus by-passing the high customs barriers, the monopolies simultaneously use these investments for their own enrichment.

Investments designed mainly for the exploitation of the national markets in the developing countries are generally made predominantly, or even exclusively, in the production of final, notably manufactured consumer goods. The extension of the range of output and the resultant scattering of productive demand further complicate the problem of organising the local production of means of production, including the material elements of both fixed and circulating capital.

Extensive sales by the imperialist monopolies to the developing countries of licences and patents have similar results. Agreements on such transactions are carried out in accordance with the general "order of priority" for various industries which again predominantly concern the manufacture of the final product. At the same time these agreements often contain provisions under which the necessary initial materials—raw materials, semi-manufactures and component parts, and also part or even all the required equipment—must be bought in the countries holding a patent for some or other finished products.

¹⁰ K. Marx, *Capital*, Moscow, 1959, Vol. III, pp. 299-300.

¹¹ See V. I. Lenin, *Collected Works*, Moscow, Vol. 4, pp. 163-165.

¹² *Stude sur l'economie mondiale. 1969-1970*, pp. 195-197.

A particularly adverse effect is produced by the restrictive articles of agreements on the organisation in the developing countries of some labour-consuming industries to supplement industrial complexes in the developed capitalist states. In this case, cheap local labour power is the main motive for the expansion of monopoly capital. In an article printed in *Fortune* magazine S. Rose frankly admitted that "Where the economics of transportation permit, U.S. companies can perform technical or capital-intensive operations at home and labor-intensive operations abroad, and then bring the products home again for final processing and marketing."¹³

Agreements on technical cooperation providing for the transfer to the developing countries of technically simple but labour-consuming operations completely exclude the creation in them of a complete cycle of production for the agreed range of goods. The content and direction of commercial and economic transactions within the framework of these production complexes are rigidly qualified in these agreements. Practically all the raw materials, semi-manufactures and component parts, not to mention the equipment, must be brought to the developing countries by companies producing and selling final product.

Another obstacle to the emergence of a modern industry in the developing countries is the trade-economic policy of the imperialist states. It limits the import of industrial goods from that group of countries in the interests of the metropolitan monopolies. The tariffs on such articles increase in the industrial capitalist states according to the degree of their processing. The Asian, African and Latin American countries therefore experience particularly great difficulties when they attempt to set up more or less integrated industrial complexes.

Another group of serious contradictions arising in connection with the introduction of the achievements of the scientific and technological revolution in the developing countries is due to the fact that the attendant rise in the capital-intensity of production generally aggravates the employment problem. The enormous army of unemployed and partly employed fetters the technical re-equipment of their economies. By lowering the price of labour power, partial employment tends to freeze obsolete methods of production through the market mechanism. In seeking for a way out of the difficulties caused by the unemployment problem, the governments of many developing countries are compelled to have recourse to the support of small-scale, often essentially archaic, production.

Despite all the difficulties and contradictions, the introduction of scientific and technological achievements helps more than anything else to resolve many key socio-economic development problems in the Afro-Asian and Latin American countries. Comprehensive mechanisation and automation of production, while decreasing the need for capital and labour outlay per output unit, can under certain conditions become an effective means of resolving such pressing problems as the shortage of capital and skilled personnel.

¹³ *Fortune*, April 1970, p. 93.

The mastery by the developing countries of highly-intensive production is not only the way to more rational use of their limited capital resources and of mitigating the difficulties resulting from the lack of skilled labour. The building of automated plants, just like the "green revolution" in agriculture, makes local output cheaper and more competitive and can therefore help to provide these countries with goods which are in short supply, substantially expand their export resources and thus create the necessary conditions for a tangible improvement in the welfare of the people. While helping to accelerate the growth in the national income and accumulation, the organisational and technical improvement of production also ensures more favourable conditions for the solution (at least, in future) of the unemployment problem, which is now a major obstacle to such an improvement.

When advanced technological processes are introduced into the economies of the Afro-Asian countries, it is impossible to avoid the contradictions which result from their uneven socio-economic development. It would be unrealistic to believe that these contradictions can be completely eliminated for they are ultimately due to the enormous contrast between modern and traditional (predominantly non-market) forms in the local economy, to the gigantic and ever increasing gap between the state of the productive forces these countries have inherited from colonialism and the requirements of scientific and technological progress and, finally, to the gap between the needs of economic development and the possibilities of the group of countries under review. However, all this is not an argument in favour of the rejection by the Third World to use modern scientific and technological achievements. There is no other way of breaking through the barrier of backwardness.

One of the main trends in technological progress today is to raise the capacity of individual production units and installations. Another trend, closely linked with the former, is the all-out improvement of interbranch and intrabrand proportions, the extension of specialisation and cooperation in production. These two trends are in irreconcilable conflict with the possibilities of the domestic market in the developing countries. It is clear from what has been said above that the capacity of the market is generally too small to ensure the normal functioning of large modern industrial complexes. This applies even more so to a great variety of manufactured products now being put out by the industrial states. The main cause of such limitations is the low level of economic development and the small size of most developing countries. It should be remembered, in this connection, that under capitalism "the limits of production", as Frederick Engels aptly said, "are determined not by the number of hungry bellies but by the number of purses able to buy and to pay".¹⁴

A young national state can somewhat smooth out this contradiction by subsidising this or that industry in excess of the level supported by the purchasing power of the local market. This also has to be done

¹⁴ K. Marx and F. Engels, *Selected Correspondence*, Moscow, 1955, p. 209.

when new capacities are being mastered. However, the less developed the country, the more limited are her possibilities for granting such subsidies and the heavier is the burden imposed by them on the country's economy. State support to enterprises, the capacity of which exceeds the requirements of the domestic market, irrespective of the motives underlying it, is still an auxiliary lever whose action in the developing countries is extremely limited because of the small resources available to them.

Progressive socio-economic changes are extremely important for overcoming the obstacles to the technical re-equipment of the economy in these countries, due to their small domestic market. These include elaboration and implementation of scientifically based national development plans, carrying out tax and agrarian reforms which will ensure the balanced transition of the whole national economy to money-commodity relations, the drawing of the broad masses into the active work of economic development, the curbing of the excessive privileges enjoyed by the propertied strata, and so on. Obviously, such measures will be easier to implement in countries embarking on the noncapitalist road of development.

At the same time domestic socio-economic changes must of necessity be supplemented and supported by the all-out expansion of the foreign economic ties of the Afro-Asian and Latin American countries. Since the growth rates, not to mention the volume, of the per capita income lag behind the dynamics of these indices in the industrial states, the exports of this group of countries can no longer be considered as only a source of funds for the payment of the import of commodities in short supply. The task of gaining access to additional markets with the help of exports is becoming ever more important as an independent factor. Without it, there can be no talk about the developing countries attaining the technical standards of modern industry. It was only logical that the U. N. Centre for Industrial Development proposed that UNCTAD II should consider the setting up of export industries in the developing countries, not only as a means of obtaining additional advantages from the international division of labour, but also as the main means of industrialisation.

Naturally, the big and relatively developed Asian, African and Latin American countries feel the need for foreign markets less acutely than the smaller states. Even India, the country with the biggest population figure and highest economic potential in this group, has great need for and will undoubtedly continue to need additional stimuli for the development of industrial production, which will be provided by the export of local products. Without exports, even India, despite her relatively capacious domestic market, is unable to take full advantage of many kinds of large-batch production based on the achievements of modern scientific and technological thought. Thus, without belittling in the least the importance of the socio-economic transformations that have matured in those countries, the accelerated growth of world economic links in general, and industrial exports in particular, become a *sine qua non* for the industrial progress of agrarian-raw material countries. This being so, along with the growth

of integration processes in the Third World the further economic convergence of the developing countries and the industrial states is inevitable through wider specialisation and cooperation between arising local industry and world industrial complex.

The situation is complicated by the fact that the capitalist states and monopolies still remain the main partners of the developing countries on the world market. As a result, the badly needed extension of foreign economic links by the young national states are often attended by an aggravation of the contradictions caused by imperialism's neocolonialist strivings. Hence, without a resourceful and consistent struggle against the unequal economic relations in the world capitalist economy, it is impossible to surmount the external barrier which prevents the scientific and technological revolution's achievements from serving the national interests of the young states.

In resolving this cardinal problem, the developing countries are making increasing use of the comprehensive economic and political support of the socialist community. In exchange for raw materials and goods of the young industry the socialist states supply the developing countries with progressive equipment and technologies and also help them train national personnel in modern production methods. The socialist states help them set up key enterprises and economic branches on the basis of which new economic complexes are being built. The support of the socialist states helps the Afro-Asian and Latin American countries withstand imperialist pressures. Mutually advantageous economic and commercial cooperation with the socialist states assists the developing countries in their fight for a restructuring of the entire system of unequal economic relations and the links inherited from their colonialist past.¹⁵

Thus, the use by the developing countries of the fruits of the scientific and technological revolution, while resolving some problems, gives rise to many others. This is a battle, on whose outcome the fate of the majority of mankind depends. Opening up broad vistas for an upsurge in the productive forces, the mastery of modern scientific and technological achievements simultaneously carries a socio-political charge of enormous force, which is capable of radically changing the nature of development in the Third World. Speaking of the role of technological progress in social life, Karl Marx emphasised that "steam, electricity and the selfactor were incomparably more dangerous revolutionaries than even citizens Barbès, Raspail and Blanqui".¹⁶

The scientific and technological revolution undoubtedly introduces serious specific features into the reorganisation of backward socio-economic structures. It can finally lead to changes in the rates, trends and forms of the young states' social development. For this reason, this range of problems calls for further profound and comprehensive study.

¹⁵ See article by L. Zevin, "Socialist Economic Integration and Cooperation with the Third World Countries", published in No. 4(10) of the *Social Sciences* quarterly, which deals with this problem.

¹⁶ K. Marx and F. Engels, *Works*, Vol. 12, p. 3 (in Russian).

CRITICAL STUDIES AND COMMENT

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Third World Problems: Myrdal's Conception and the Marxist Viewpoint

From the Editors. An abridged Russian translation of Gunnar Myrdal's three-volume work *Asian Drama. An Inquiry Into the Poverty of Nations* has been published in the Soviet Union.* The book carries an introduction giving a critical analysis of the methodology and conclusions of Myrdal. We offer the readers a brief version of this introduction courteously provided by its authors.

* * *

It is hardly worthwhile to outline in detail the reasons which prompted us to select the work of Gunnar Myrdal and use it for reflection on the historical destinies, the present situation and prospects of countries of South Asia. Our colleague is an eminent and authoritative student of the Third World. His opinion carries weight with Western consultants to governments of developing countries, and politicians and economists of these countries lend an attentive ear to his recommendations. His Swedish citizenship and former status as a United Nations representative, as he himself assumes, make for a certain independence of judgment and entitle him to speak bitter truths to the Asian public and to its leaders.

Professor Myrdal, more clearly than many other authors before him, expressed the viewpoint current in the radical wing of Western economists, that economic growth factors are not of key importance for Third World countries. He and his supporters have advanced a new sociological conception of the reasons for the backwardness of these countries, namely, that all the troubles of the Third World countries and peoples stem chiefly from the domination of archaic social institutions and views which permeate the entire system of their social, economic and spiritual life. Myrdal rightly criticises the numerous "economic growth theories" which proclaim the principle of "automatic change" in the social life of the peoples in the process of technico-economic modernisation.

In his fundamental work Myrdal marshalled a vast amount of factual material and outlined the principles of a new theory of de-

* G. Myrdal, *Sovremennye problemy "tret'yego mira"*, Progress Publishers, Moscow, 1972, 768 pp.

velopment and sought to determine the relation of factors which ensure the elimination of backwardness by transition to allround progress.

In 1970, Professor Myrdal published another book, *The Challenge of World Poverty. A World Anti-Poverty Program in Outline*, which is a sequel to *Asian Drama* both for its subject matter and the author's reflections. In the Preface to the new book he deplores the fact that *Asian Drama* was interpreted as an attack on aid to the developing countries, which pleased the conservatives and still more the reactionaries in Western countries.¹ True enough, some passages and propositions in that study furnish grounds for allegations that, regardless of the scope of aid given to South Asian countries, they cannot be rescued from the morass of stagnation. For our part, we naturally can only welcome the new book, in which Myrdal's own stand is presented with greater consistency.

MYRDAL'S "UNBIASED" APPROACH AND HIS "INSTITUTIONAL THEORY"

In fact, G. Myrdal does not lay claim to theoretical originality by calling his method of study an "institutional approach" and assuming that it is a continuation of the traditions of the classical school in economics (from Adam Smith to Karl Marx). The central idea of this approach, as he defines it, is that "history and politics, theories and ideologies, economic structures and levels, social stratification, agriculture and industry, population developments, health and education, and so on, must be studied not in isolation, but in their mutual relationship".² At first glance, such a formulation of the question evokes no objection. But what matters is how this principle is applied to a definite scientific study. The main difficulty in assessing the "institutional approach" is of a dual nature: first, with respect to scale and method of study and, second, whether it is successful in establishing the decisive relationships, i. e., the most essential ties in their objective importance and historical and logical sequence.

The viewpoints of G. Myrdal are anti-colonialist and anti-neocolonialist, and this is sufficient for us to say that they are close and comprehensible to Marxists, notwithstanding his avowed sceptical attitude toward Marxist researches. When reading Myrdal's work, one gets the impression that he has sought to balance his criticism of Western bourgeois scientists and of Marxists in order to demonstrate his own special objectivity and his "nonpartisanship". Thus, he asserts that to the extent to which classical (including Marxist) political economy is theoretically based, the bias of Western economists is often similar to the bias of economists from socialist countries. Specifically, he reproaches Western economists who, in his opinion, have accepted the Marxian proposition that the influence of industrial-

¹ See G. Myrdal, *The Challenge of World Poverty. A World Anti-Poverty Program in Outline*, New York, 1970, pp. IX-X.

² G. Myrdal, *Asian Drama. An Inquiry into the Poverty of Nations*, New York, 1968, Vol. 1, p. X.

isation and capital investment in general spreads swiftly to other sectors of the economy and also to social institutions. But what Myrdal refutes here is not a Marxian proposition, but a crude opportunist vulgarisation conceived in the imagination of anti-Marxists. Marxism, however, has never examined both industrialisation and the primitive accumulation of capital preceding it outside the course and the results of the class struggle in which the respective social institutions are subjected, depending on the concrete historical conditions, either to slow or to swift (in the course of revolution) transformations.

Myrdal continues to refute the assumption he himself ascribed to the Marxists about the direct connection between social changes and the advance of the economy, and asserts that "economic" policies are undoubtedly easier to carry out than are social policies that challenge vested interests, violate deep-seated inhibitions, offend cherished traditions and beliefs, and work against the heavy weight of social inertia".³ That this statement is unjustifiably categorical is evident if only from the experience of revolutionary changes in the Soviet Union. Indeed, the two main "challenges to vested interests"—the "Red Guard" attack on big capital in 1917-1918 and the collectivisation of agriculture in 1929-1930—were effected with comparative "ease" as regards the pace of the basic transformations. But the first attack was followed by measures in the economic sphere which culminated in the rehabilitation of the economy in the second half of the 1920s, while full-scale industrialisation which began in 1927 preceded the collectivisation of the 1930s and then accompanied it up to the complete transformation of agriculture.

In general, the question what measures—political, social or economic—demand greater time and effort, and the sequence of these measures themselves, is decided according to the concrete situation in a country. In the spring of 1918 Lenin pointed out that the proletariat's winning of power in Russia had been easier than in Germany, but in the latter, after solving the difficult problem of power, it would be easier to build socialism.

RECOGNITION OF THE MULTI-STRUCTURAL NATURE OF SOCIETY AS A METHODOLOGICAL BASIS OF RESEARCH

A *specific multi-structural pattern*, which includes vast spheres of archaic traditional relations is characteristic of South and South-East Asian countries. The Marxist-Leninist time-tested theory of social formations and structures, however, has not been accepted by Myrdal. We are fully aware that an approach to the study of a given society primarily as a multi-structural one by itself does not yet offer a solution to the problem but merely paves the way to it, and it does this not by simplifying and reducing, but by complicating and extending the front of research. It would be wrong to think that it is merely a matter of determining the concrete relationship of different sectors in the given socio-economic pattern.

³ G. Myrdal, *Asian Drama*, Vol. III, p. 1907.

The specifics of a given pattern stem not only from the unique nature of inter-sectoral proportions, but also from the national concrete features of each sector separately and, correspondingly, in interaction with other sectors.

By establishing what sectors of a given type the economy possesses we only approach the problem of indicators for determining the place and the role of individual sectors, in particular, which of them is decisive. Economic studies usually give priority to two indicators, the share of the given sector in the gross national product and in the working population. But the experience of research and theoretical propositions of the founders of Marxism-Leninism demonstrate the inadequacy of these indicators.

The example of India proves that the volume of the surplus product is by no means adequate to the scale of extended reproduction in the sector where it is created. More than that, under a certain system of redistribution this volume may determine both the stagnation of the given sector and of the entire national socio-economic pattern, or largely be spent on the swift expansion of production in another sector (for example, the outflow of resources from small-scale agriculture into large-scale industry). In some cases the redistributing system and its corresponding institutions, failing to meet the needs of extended reproduction, help to perpetuate the domination in society of strata which live off the surplus product in the given sector.

Recognition of the multi-structural nature of society necessitates a more discriminating approach to institutions of the superstructure. Naturally, the state superstructure existing in the sector which determines the social system of the given society ultimately prevails in the latter. But the system of superstructural institutions also includes social institutions of socio-economic sectors which are either withering away or, on the contrary, are emerging. Then the state superstructure can be an expression of a bloc of different class forces.

In the process of their long coexistence and struggle the sectors are subjected to reciprocal influences, which in conditions of general social stagnation lead to the drawing together of their formal organisations and functions. For example, features of tribal solidarity, slavish submission, guild and social estate organisations are found in the system of India's caste institutions. At different levels of the caste hierarchy these features are displayed in different degree or are totally absent.

Similarly, the place of the labouring classes in economic, political and ideological life cannot be determined by their numerical strength. The growing expenditure on reproduction and on technical equipment tends rather to limit the volume of labour as the transition is made from archaic to historically progressive sectors. A rise in the labour productivity of individual workers in various sectors also operates in the same direction. But the workers employed in the more productive spheres can make up for their relatively small numbers by greater cohesion, culture, activity and other advantages. In this sense present-day proletarians are farthest removed from persons engaged in the natural-patriarchal economy, and between the two groups we find a

whole range of workmen of various production types and social nature. This factor is also important for determining the place of the given sector in the whole pattern of society.

THE DISTRIBUTION SYSTEM AS A DERIVATIVE OF THE MODE OF PRODUCTION AND ITS INDICATOR

Myrdal's call for eliminating the traditional institutions as the main stumbling-block to progress would carry more weight and be more constructive were he to reveal their functional mechanism. The secret of the stability of traditional institutions is rooted not so much in the strength of the subjective notions and "approaches", not even in the fact that mass social psychology plays the indubitably important role but in the fact that these institutions continue to perform a number of very important social functions, because the new functional mechanism has not yet taken shape or has not yet gained sufficient prestige. In particular, most of the traditional institutions have retained the important function of the redistribution of the product, chiefly that of agriculture and the crafts.

Under this traditional system, labour or any other socially-useful activity receives only an indirect, very inexact evaluation. The impression is created that the influence of economic incentives inherent in capitalism becomes frozen in such a traditionally organised environment. Hence we can understand the position of P. Mahalanobis, an eminent ideologist of state regulation in India, who called for relentless attack on the authoritarian structure of social institutions that support inequality, social stagnation and religious rites and practices devoid of any spiritual value.

But the difficulty is that any system which has destroyed the traditional pattern with its hierarchic system of redistributing the product must the very next day offer, and not only offer but also institute its own system of redistribution which, moreover, must be actually acceptable to the working people. It should also be borne in mind that during this replacement any failure will affect very painfully the most impoverished elements of the traditional structure, who have no stocks of food and other material goods to "weather" the transition period until the socio-economic and technical changes begin to bear fruit.

No wonder that it is the poorest sections of the population, especially in the countryside, that often treat with great distrust and apprehension any calls to break up a system of social relations which for centuries have maintained their existence though, as a rule, at the lowest physical level. Only if a new system of labour remuneration, which is more advantageous than the old one and is clear and comprehensible to the peasant, artisan and small tradesman, is put to the foreground—only then can the entire programme of changes become acceptable to them.

AWARENESS OF SOCIAL BEING IN A MULTI-STRUCTURAL SOCIETY

As a matter of fact, all the prevailing South Asian ideologies have in principle justified the existing system of the redistribution of the product and only in exceptional cases have tried to change it in some way. In a new historical situation when the most acute social conflicts are already mediated by the invasion of capitalism, the traditional religious consciousness serves as a basis for a conservative reaction to the newly-emergent phenomena and processes. At the same time no narrow class ideology, including bourgeois nationalism in a more or less "pure" form, can take the place of the religious world outlook as the "working", everyday ideology of the majority of the population. In this situation the appearance of Gandhism as an ideology laying claim to nationwide perception and recognition seems to us a quite natural phenomenon. Moreover, for a while the strong aspect of this ideology is its seemingly weak features — vagueness, eclecticism and evasion of class issues; it is for this reason that its socio-economic programme is widely accepted, at least, at the stage of the struggle for independence.

After independence was won and the economic and socio-class aspects of the struggle for social progress came to the fore it became necessary to formulate a more definite programme of changes than Gandhi had proposed. However, both the theory and practice of Indian planning, especially its general declarations, contained several elements of a social compromise (with obvious preference being given to the propertied classes). In conditions of exacerbated class contradictions this programme met with less and less support, this being one of the reasons for the crisis that overtook the ruling party — the Indian National Congress. Nevertheless it is still difficult to predict with any confidence when the ideology of social compromise and conciliation will yield its leading place to an ideology with precise class positions. Ultimately this depends on the pace, scale and acuteness of socio-economic developments.

These remarks concerning the complex of interrelations and mediating factors in multi-structural societies represent but only a very brief account of some of the concepts which have been developed in Soviet science. But even they, in our opinion, show how oversimplified is Professor Myrdal's understanding of the Marxist method of studying socio-economic patterns.

ESSENCE OF STAGNATION, BACKWARDNESS AND THE NEED FOR DEVELOPMENT

Myrdal rightly reproaches contemporary Western bourgeois economists for avoiding the problem of the essence of underdevelopment and the need to develop. The Marxist approach to "underdevelopment" is far from the making of mere arithmetical comparisons of per capita national income. This indicator is an important but not

the decisive gauge of the development level of a given society. Marx and Engels never reduced the problem of the backwardness of the East to a mere comparison of East and West in the sphere of production. For them stagnation of the social pattern was the chief indicator of backwardness.

Indeed, according to Marx, the traditional institution of the village community emits a whole stream of diverse but equally conservative impulses acting in different directions. Some of them moulded a historically concrete personality devoid of creative potential; others bolstered up oriental despotism. If we remember the idea which Engels expressed that capitalist accumulation was impossible in conditions of oriental despotism, we have here the initial comprehensive approach of the founders of Marxism to the problem of stagnation and backwardness of Asian society in the mid-19th century.

Translating their thoughts from the language in which they were expressed into the propositions of contemporary sociology, we obtain a model of a dual social structural organisation in which the totality of micro-structures of one type (village communities) provides the unity of elements on which the macro-system (oriental despotism) rests. The mechanism of this organisation operates through the system of the social division of labour both within each micro-structure (agriculture and the crafts) and on the scale of the macro-structure (through the collection and redistribution of the rent-tax). The economic and social equilibrium of this system gave rise to stagnation, which was also subjectively expressed in the lack of the historical initiative among the members of this society, their traditionalism and submission to superstition. As we see, Marx is far removed from the idea that social relations are automatically levelled out as production develops and from the "theological" evolutionism of which he is accused by Myrdal.

Such criticism of Marxism sometimes arises from an oversimplified, mechanistic interpretation of its dialectical method, when the proposition that quantitative accumulation turns into a qualitative change is underscored without making the point that such a transition is a revolutionary leap, a social, political and ideological change prepared and directed by the will of classes, parties and their leaders. These changes mature and occur as a result and in the course of deep-going deformations of traditional socio-economic systems, their political superstructures and respective ideologies. How far removed Marx was from creeping evolutionism is seen from his splendid formula: "The first and most important of the inherent qualities of *matter* is *motion*, not only *mechanical* and *mathematical* movement, but still more *impulse*, *vital life-spirit*, *tension* or, to use Jacob Bohm's expression, the *throes [Qual]* of matter."⁴ These attributes of motion are displayed most clearly in its highest and most intricate form—the progress of society. The ability of a given society to make history is not a divine gift, but a potential accumulated by the labour, the

⁴ K. Marx and F. Engels, *The Holy Family or Critique of Critical Critique*, Moscow, 1956, p. 172.

intellectual and political activity of the masses and individuals, their ability to search for the new and to struggle against obsolete institutions and notions.

The Marxist formulation of the basic, constantly operating stimulus to progress differs substantially from the system of valuations offered by Myrdal because it proceeds not from selectively offered criteria but from objective, inexorably operating factors.

Any society naturally needs a system of social rules of law and morality and corresponding superstructural institutions to regulate and normalise relations between its members, micro-elements (family, community, cast), productive units and macro-formations (state, nation, national economy). In stagnant (to be more exact, slowly evolving) societies this mechanism, both in its ideological and institutional parts, acquires in the eyes of the people the attributes of eternity, consummation and consecration by divine reason and will. This attitude of members of society to their institutions and moral-legal rules imparts to both a kind of additional independence, which offers some historians and sociologists grounds for insisting on the self-sufficing nature of the institutional-legal complex in the East.

The development of capitalism has upset the regulating functions of this complex, which in different countries and in different ways has failed to adapt itself to the new needs of social regulation. Eclectic institutional legal superstructures have begun to arise which combine remnants of the old complex with certain elements of the new, bourgeois mechanism. Objectively, this mixture reflects the transitional, multi-structural nature of the socio-economic pattern. Subjectively, it reflects and simultaneously engenders disharmony in social consciousness and morality.

In many instances Myrdal—either in passing or in giving more detailed arguments—suggests that the West has solved its main social problems (true, there are also assertions to the opposite effect). In his latest book he is more critical in his evaluations of Western life, apparently due to the explosion of its social conflicts at the end of the 1960s, which have blasted the myths concerning the social equilibrium in contemporary bourgeois society.

But we would like to pose the question on a broader plane. The point is that despite recessions and crises, the economy of capitalist countries, utilising the fruits of the scientific and technological revolution, has been growing at relatively high rates in the postwar period. At the same time the apparatus of socio-ideological regulation of the capitalist "consumer society", seemingly streamlined, more and more often fails to perform its main function, that of determining the social behaviour of both individuals and groups. The increasingly felt and realised anti-individual and anti-social nature of contemporary capitalist society is creating before our very eyes all kinds of non-conformist groups which, despite their differences, display an intrinsically active non-acceptance of this society, its philosophical and institutional regulators. In other words, the scientific and technological revolution and the exacerbated class contradictions are a forceful reminder of the historical doom of capitalism.

Myrdal in effect leaves unanswered the question: what will take the place of the traditional institutions in South Asian countries when they embark on the road of rapid progress? The transplantation of the Western institutional mechanism to this region holds out little promise because it is becoming less and less effective even in its own environment. So scientific thought in South Asia is taking an increasing interest in the experience of the socialist guidance of swiftly developing society. It is clear, however, that the borrowing of separate, even very important elements of socialist experience (for example, planning of the national economy), outside the entire system of political, social and other regulating measures, produces only partial results. To make this element "work" even in its own sphere, it must be accompanied by a whole set of complementing and reinforcing measures in all spheres of social life. This is also demonstrated by the experience of socialist industrialisation.

THE "INSTITUTIONAL CONCEPTION" AND THE DOCTRINE OF INDUSTRIALISATION

We subscribe to Myrdal's stand when he asserts: "South Asian countries now run the risk of creating petty islands of highly organised Western-type industries that will remain surrounded by a sea of stagnation. If this fate is to be averted, industrialisation must be so directed, and so complemented by policies in other fields, as to permit simultaneous development outside the sphere of modern large-scale industry."⁵ Continuing his reflections, in many respects correct, about the most effective trend of industrialisation, Myrdal feels that something is lacking in his mechanism of general and allround development. And so he introduces politics as a stimulator: "If not accompanied by direct interventionist policies towards other [traditional — V. P., R. U.] sectors of the economy, it [industrialisation — V. P., R. U.] would merely bolster the enclave pattern of colonial economic experience."⁶ Special political measures, he asserts, "are necessary not only to compensate the rest of the economy for the absence of sizable automatic spread effects from industrial starts but also to support the industrialisation drive itself".⁷ But what class will reap the fruits of such industrialisation? This remains an open question.

As regards Third World countries, Marxist scholars have always understood the inevitability of the relatively prolonged existence of a "mixed", transitional economy in which the socio-economic functions of the state grow much stronger. Today it is already evident that the government of a developing country, upholding its independence, resisting the onslaught of imperialism, and pursuing a sound economic policy, is able to ensure national sovereignty and internal consolidation of the patriotic and anti-imperialist forces (of course, this does not apply to states which have succumbed to neocolonialist bondage).

⁵ G. Myrdal, *Asian Drama*, Vol. II, p. 1203.

⁶ *Ibid.*, p. 1204.

⁷ *Ibidem*.

All this conclusively refutes the old Western doctrine about the unpreparedness of Afro-Asian peoples for self-government.

The situation is more complex as regards the scale and purpose of the socio-economic functions of the young states. Moreover, this complexity is a result not so much of the difficulties which stem from the unique nature of the tasks to be accomplished as of the fact that the discharge of this function by the state is determined by the contradictory outcome of the clashes of forces, internal and external. Traditional institutions, too, become the target of these clashes. Marxism unhesitatingly favours the elimination of those institutions which fix the privileges of the propertied classes. As for the institutions which reflect the archaic forms of unification of the working people, they demand a cautious approach. The possibility of mutually fruitful coexistence of some traditional institutions and modern production had long been discussed in Marxist literature. Moreover, corresponding (and prior) changes in the social system have been postulated as a requisite for such coexistence. We find such an approach, for example, in Engels's letter to N. F. Danielson of June 18, 1892, in which he wrote that in Russia large-scale industry would kill the village community, "unless other great changes occur which will help to preserve this community. The question is, will a change take place in the public opinion of Russia that would make it possible to develop modern industry and modern agriculture, while preserving the community and at the same time modifying it so that it could become a suitable and convenient instrument for organising this modern production and for transforming it from the capitalist into the socialist form?"⁸

The quoted excerpt deals with Russia of the end of the 19th century for which, as follows from Engels's subsequent arguments, such a possibility as regards the community was no longer available. At the same time it is clear that in principle Engels recognised the usefulness of interaction of pre-capitalist and modern forms of production and social organisation during the socialist transformation of both. Such interaction was observed (although without the participation of the completely disintegrated village community) in the USSR during the period of the New Economic Policy. And so, Marxism by no means limits itself to recommending the elimination of the traditional institutions through industrialisation or in some other, direct or indirect way, but even provides for the possibility of utilising them as a suitable instrument for organising modern production in the concrete conditions of a given country or its individual region.

Moreover, the uncompensated removal of traditional institutions would signify the extension of market spontaneity to the sphere of redistribution. The point is that the scale and assortment of the market demand is largely determined by the strength of the traditional institutions which lay claim to rigid control over the distribution and use of the means of production (land and water) and instruments of labour. Yet, as Lenin pointed out, the home market develops "not so

⁸ K. Marx and F. Engels, *Works*, 2nd ed., Vol. 38, p. 315 (in Russian).

much on account of articles of consumption as on account of means of production".⁹ That is why the removal of traditional institutions entails deep-going qualitative changes in the market demand and ultimately in the entire national system of the social division of labour. The Marxist approach, as can be seen, is very far removed from the super-revolutionary slogan of immediately abolishing the traditional institutions by administrative compulsion. The whole business is much more complicated, especially in its constructive aspect.

When it is a matter of pre-capitalist or less developed semi-capitalist countries which strive to break out of the grip of centuries-old backwardness, we feel like recalling the following fundamental proposition of Lenin's: "If 'we' are successfully to solve the problem of our immediate transition to socialism, we must understand *what intermediary paths, methods, means and instruments are required for the transition from pre-capitalist relations to socialism. That is the whole point*"¹⁰ (Italics ours—V. P., R. U.). This statement shows that Lenin was remote from the primitive direct approach which Myrdal ascribes to Marxists in order to depict them as biased dogmatists. He ascribes to Marxists the following schematic approach: industrialisation and capital investments, i. e., a change in the mode of production, bring an automatic change in social institutions.

Myrdal himself unwittingly draws nearer to Lenin when he rejects a single model for the multistructural society: "In its simplest form the capital output model contains only one sector."¹¹ He then criticises the limitations of one-sector models but later on concludes in a quasipractical manner: "The aggregates in two-sector models are far too broad for these models to lead to a better understanding of South Asian reality. Even if the sectors are well chosen, the fragmentation of the economies is too great and the misplaced aggregation within each sector is too excessive."¹² Is our colleague rejecting his own credo, proclaimed at the beginning of his study, which calls for general mutual relationships?

How profoundly Lenin understood the entire complexity of the industrialisation process in a backward country is demonstrated by his statement: "An enormous step forward must be taken in developing the productive forces; it is necessary to overcome the resistance (frequently passive, which is particularly stubborn and particularly difficult to overcome) of the numerous survivals of small-scale production; it is necessary to overcome the enormous force of habit and conservatism which are connected with these survivals,"¹³ How is it possible to criticise Marxist science for underestimating "institutional factors" or "secondary social patterns" after what Lenin said on this score!

⁹ V. I. Lenin, *Collected Works*, Moscow, Vol. 3, p. 54.

¹⁰ *Ibid.*, Vol. 32, p. 349.

¹¹ G. Myrdal, *Asian Drama*, Vol. III, Appendix 3, p. 1952.

¹² *Ibidem.*

¹³ V. I. Lenin, *Collected Works*, Vol. 29, p. 421.

Lenin, and the Communist Party of the Soviet Union never regarded industrialisation as a single action similar for all economic structures. Hence we cannot agree with Myrdal's interpretation of this question as applied to the experience and prospects of Asian countries. The fundamental decisions of the CPSU, which carried out the Leninist plan of building socialism in conditions of the centuries-old backwardness and multi-structural pattern of Russia, contained a precise subdivision of methods and rates of industrialisation by structures and types of the economy. For example, the Theses, approved in October 1927, by the Joint Plenary Meeting of the Central Committee and the Central Control Commission of the Communist Party of the Soviet Union (Bolsheviks), pointed out that in drawing up the First Five-Year Plan "it is necessary to bear in mind the development of small-scale local industry, dominated by craftsmen and artisans, which, serving now as an absolutely necessary supplement to large-scale industry, helps to eliminate the shortage of goods and mitigate unemployment".¹⁴

Myrdal, had he taken the time to study the Soviet experience and not simply wave it aside because of his "biased" attitude to Marxism, could not but agree as a scholar that the Soviet experience in industrialising the country, building up the national economy and transforming small-scale and smallest production, especially at the initial stages between 1920 and 1930, anticipated in the main everything that many young national states are trying to do today.

IMPORTANCE OF A COMPREHENSIVE STUDY AND ALLROUND TRANSFORMATION OF THE THIRD WORLD

It is not Myrdal's institutional conceptions which he regards as a cure-all for the ills of the traditional structures in Asian countries that we find so significant, but the fact that scholars of his calibre are trying to find such remedies. Myrdal's institutional theory did not come as something totally unexpected. It is a perfectly natural reaction to the fact that contemporary imperialism continues to hold many strong economic positions in Third World countries and to exploit them by more refined methods. As a result of this fact these countries notwithstanding 20-25 years of sovereign development, have not escaped backwardness but find themselves lagging even farther behind the developed capitalist countries.

At the same time Myrdal's work also reflects a certain disappointment caused by the exaggerated hopes placed in state capitalism, understood as a concentrated expression of the economic policy and respective functions of the state machine. In the works of some Soviet authors in the 1950s, when there was not enough experience and information, the functional ties of various links of the state machine in the newly-free countries and unofficial institutions were at times regarded in a rather oversimplified way and without due aware-

¹⁴ *The Communist Party of the Soviet Union in Resolutions and Decisions of Congresses, Conferences and Plenary Meetings of the Central Committee, Part II, 1925-1953, Moscow, 1953, p. 284 (in Russian).*

ness of their interconnection. Some socio-economic studies underestimated the intricacy of the multistructural social mechanism and did not fully appreciate the interconnection of state life, class, group, and personal relations and of the ideological interactions in the sphere of traditional spiritual life of the peoples who had just thrown off the imperialist yoke.

Nevertheless, if exceptional stress is deliberately laid on traditional institutions, which undoubtedly restrain social progress, this is bound to lead to different but similarly one-sided methodological extremes, to the exaggeration of their importance and to obvious underestimation of the new complex of economic, political and socio-class factors. The archaic survivals in South and South-East Asia complicate the development of production to such an extent that at times it is not difficult to accept them as absolutely dominating all spheres of life. Their tremendous real force reflects the despotism of obsolete means of production, especially in the small-scale commodity and the natural economies which cling to their existence. Old views and obsolete institutions do not change automatically, even less so can they be eliminated merely by administrative measures, even if rational compulsion, of which Myrdal is a supporter, is employed by the authorities. It takes deep-going socio-economic development to eradicate obsolete views and institutions.

We are far from denying the role of conscious institutional changes and planning the activity of people, of institutions and organisations seeking to remove barriers erected to progress by the "despotic domination" (F. Engels), of obsolete means of production and corresponding institutions and views in life. But we cannot fail to see that the revolution in the productive forces, in the means and methods of production, the industrial revolution under way in Asian countries, now slow, now swift, and scientific and technological advances are all bringing into being new class forces which are boldly tackling the tasks of political and social reconstruction. By emancipating society from the traditional and despotic institutions that fetter it, the revolution creates new social, and more appropriate forms, implacably destroys the obsolete ways of life and customs and promotes the creation of new, progressive institutions.

RELATIONSHIP OF THE UNIVERSAL AND THE PARTICULAR IN THE EVOLUTION OF SOUTH ASIA

The internal mechanism of the development of every country in this region has its specific national features, its own social and economic content. Myrdal, rightly criticising Western sociologists, declares: "Not only is the social and institutional structure different from the one that has evolved in Western countries, but, more important, the problem of development in South Asia is one calling for induced changes in that social and institutional structure, as it hinders economic development and as it does not change spontaneous-

ly, or, to any very large extent, in response to policies restricted to the 'economic' sphere."¹⁵

Myrdal is right when he reproaches Western economists for the mechanical application of terms and concepts of developed capitalist economy in explaining the processes under way in the different socio-economic environment of South Asia. Indeed, in our times this environment is unique, and it is senseless today to superimpose on it certain laws of early or mature monopoly capitalism. At the same time, whereas for a bourgeois radical scholar like Myrdal this unique nature of the situation in South Asia is absolute, for a Marxist economist it is relative.

Science knows of not a few multi-structural societies in which economic development, especially on a new organisational and technical basis, was for a long time resisted by the conservative social environment and was within the narrow sphere of capitalist relations. In order to ensure the breakthrough of capitalist progress in the sphere of traditional relations. England, for example, required long and cruel internecine wars in which feudal lords of the type of Richard III destroyed each other, the break-up of feudal armed bands, the eviction of millions of peasants from the land and, lastly, a revolution which sent a king to the scaffold. The unique feature of the South Asian situation is not the existence of a socio-economic environment in which the dynamism of the economy is hampered and finally stifled, but the fact that the problem of pre-capitalist structures has now to be solved in entirely different economic conditions, with the two world systems, the capitalist and the socialist, confronting each other, in the conditions of the historical, technical and organisational obsolescence, archaism and ultimate doom of the lower forms of capitalist enterprise deprived of the prospects it had in Europe in the 17th-19th centuries, and when the non-capitalist path of socio-economic changes is quite feasible. All this is so important that one wonders how Myrdal could have failed to examine this aspect of the problem.

True enough, later on Myrdal returns to the problem of the differences in the initial conditions in Europe on the eve of the industrial revolution and those in present-day South Asia. Europe, he says, had the following advantages: a favourable climate, a lower population growth rate combined with the possibility of "off-loading" the surplus population through migration, domination of world trade and exploitation of the resources of the peoples in backward regions, greater adaptability of the way of life and institutions to the task of modernisation. These differences had already been discussed and studied by the founders of Marxism-Leninism, and their relative importance was recognised and recorded in Marxist literature almost a century ago.

It seems to us that Myrdal's evaluation of the advantages of West European countries on the threshold of industrialisation as compared with South Asian states today is oversimplified and one-sided. The

¹⁵ G. Myrdal, *Asian Drama*, Vol. I, p. 26.

background to these advantages was the fact that the industrial revolution in Western Europe had been preceded by an entire historical epoch of the birth of capitalist relations under the aegis of national statehood, an epoch which lasted for scores or even hundreds of years. The general spread of wage labour, literacy and the break-up of the social hierarchy of feudalism, and other conditions for the swift and deep influence of industrialisation on the socio-economic pattern, in many ways stemmed from the advent of capitalism. Under colonialism, this process was narrow, incomplete and one-sided, and this engendered inertia to the traditional environment in South Asia.

Incidentally, the way for the spread of capitalism in Western Europe was cleared with the utmost energetic cooperation of the absolutist state which resorted to the most cruel methods. True, the direct participation of the state in private enterprise was smaller at the dawn of capitalism than it is today (although state manufactories were set up even in the 6th-18th centuries), but this has its explanation—small cost of running one enterprise, simple technology, management and marketing as compared with the second half of the 20th century with its unprecedented capital/output ratio and concentration of industrial production stimulated by the current scientific and technological revolution.

On the other hand, many West European states in the epoch of primitive accumulation developed a different function to an unusual degree—brutal compulsion of wage workers to toil for the capitalists and active interference in the terms of hire in favour of the employer. This was what the bourgeois state did within the metropolitan country. The introduction of slavery and forced labour in the colonies at the price of destroying entire peoples—this was what the bourgeois state did beyond the bounds of the metropolitan country.¹⁶

The second function is totally absent and the first one is either absent or relatively little displayed in present-day South Asian states. The latter is due, of course, not to any change in the class nature of the bourgeois state, but to at least three important circumstances: the impossibility of further reducing the price of labour power without sharply worsening the already poor conditions of its reproduction; growing resistance of the working people, above all the organised struggle of the working class, and the high degree of class solidarity, which restricts the possibility of state pressure on the working strata; the tremendous influence exerted by the "demonstration effect", i. e., the influence of the achievements of the working people in the socialist countries and also by the democratic and social gains which the working class won in the developed capitalist countries.

At the same time whatever the socio-economic functions of the state, they by no means determine ultimately the special way in which

¹⁶ Lenin held that the establishment of capitalism in Europe and America rested on "the barbarous policy of bourgeois civilisation which has built the prosperity of the exploiters belonging to a few chosen nations on the enslavement of hundreds of millions of working people in Asia, in the colonies in general, and in the small countries" (*Collected Works*, Vol. 26, p. 424). Needless to say, the Asian states which have embarked on the capitalist path today have no such possibilities.

the general laws are realised and refracted in the particular conditions of a country or a region in a hitherto unknown world situation. Does not the Soviet multi-structural society in the early 1920s present a similarly, if not more, specific phenomenon of world history? Moreover, if one bears in mind that notwithstanding her technico-economic backwardness, Russia effected a political revolution which opened up the possibility for the socialist remaking of society. Soviet Marxists, however, far from denying the applicability of general laws to the processes and methods which transformed our socio-economic system, actually enriched them with practical experience of world historical significance. Notwithstanding the unfavourable side-effects of some of the solutions which the pioneers of socialism found in practice, this approach was fully justified.

It is becoming more and more obvious that Soviet experience, both at the initial and subsequent stages of the development, for their external and internal specific features, contains so much of what is generally instructive and basically indispensable for multi-structural countries that today none of them can afford to ignore this experience and no conscientious scholar can dispense with it in his recommendations.

OBJECTIVE TRUTH AND SUBJECTIVE EVALUATIONS

For Marxists objective truth,¹⁷ as soon as it is a question of socio-economic changes, is inseparably linked with a class approach. Outside a class and its party "man", i.e., a scholar, cannot prove the reality, power and effectiveness of his thinking. Proceeding from this position, we would like to disclose the logical contradictoriness at least in Myrdal's general approach to planning. He rightly notes that a definite social content is superimposed on the valuations and aims of planning, but he goes too far along the path of relativism, stating that "logically there are no objective values, only subjective valuations".¹⁸ Let us note that in the valuations of any man, whatever views he may adhere to, there is a grain of objective truth. It is a different thing that valuations made by progressives who have mastered the scientific methods of cognition contain more objective truth than the valuations of people holding conservative views and burdened with superstition and bias.

Incidentally, Myrdal himself rightly assumes that a "plan can have no existence except as a political program... No work, even on the details of a plan, can be undertaken and brought to a successful conclusion, except on the basis of *seriatim* political decisions".¹⁹ It is understandable that any political decisions (the more so, if they are *seriatim* decisions) reflect definite class interests, and in this broad sense they are class subjective. But the question is, what class acts as the main subject of planning. Such a formulation of the question alas,

¹⁷ See K. Marx and F. Engels, *Selected Works*, Moscow, 1969, Vol. 1, p. 13.

¹⁸ G. Myrdal, *Asian Drama*, Vol. III, p. 1884.

¹⁹ *Ibid.*, p. 1889.

is not to be found in Myrdal's book, although his sympathy for the working sections (not without a certain critical attitude) is beyond doubt.

Marxists, incidentally, have never suffered from a complacent attitude to the working man. Their main criterion has always been what place a given person or class holds in historical progress. Hence it is a matter of primary importance to define what this progress means in a given period for world history and for a given country.

One of the constant objects of Marxist studies of the liberation movement in Asia has been to establish its true social content. It is only natural that some of those who took the path of the revolutionary struggle after the Great October Socialist Revolution wanted historical progress in their own countries to be as close as possible to the level of the first socialist transformations in the world. These good intentions gave rise to scientifically unjustified notions that the socialist stage of the revolution was already an immediate political reality in Asian countries. The great revolutionary, Lenin, had to dispel such "Left"-revolutionary illusions as early as at the Second Congress of the Communist International.

Unfortunately, the idea of the direct fusion of the anti-imperialist struggle for national sovereignty with the anti-feudal movement has been realised only in part and by no means everywhere. At the same time, although life has made its own adjustments to the theoretical assumptions of the rates and forms of the revolutionary process, its general meaning and general sequence (i.e., independence-democracy-socialism) had been confirmed in the pattern foreseen by Lenin. Hence, there are no grounds for pessimism, if one or another, even very important link is missing as yet in the process of socio-economic changes. Thus, agrarian changes in the specific social conditions of the South Asian countryside have assumed forms to which historians are not accustomed. But even in places where they have been deferred or dragged out, one cannot fail to notice the inevitable, even if slow, accumulation of democratic consciousness and the gradual maturing of national more or less radical solutions of the land question upon which the reconstruction of the entire society depends.

That is why we cannot agree with Myrdal's assertion that "... the opportune moment for a radical reshaping of the agrarian structure has passed. Sweeping changes might perhaps have been accomplished in the revolutionary environment of the immediate postwar and post-independence years. But if consent for a fundamental change in property and tenancy rights might have been won then, it is not possible now. The piecemeal reforms that have been accomplished have bolstered the political, social and economic position of the rural upper strata on which the present governments depend for crucial support".²⁰

Let us recall that the solution of the agrarian question in the Soviet Union had a long history. If we take as the initial point the program-

²⁰ G. Myrdal, *Asian Drama*, p. 1367.

me of the first Russian revolutionaries, the Decembrists, and continue up to the redistribution of the land after the October Revolution, we will find that the struggle lasted for almost a century. On this long road situations arose more than once when it seemed there were no less reasons for pessimistic conclusions than Myrdal has. So far it cannot be ruled out that in South Asia, too, the agrarian question may be settled in a more general context, in the process of a social conflict historically much broader and deeper than the struggle of the peasant for the land. Myrdal himself comes close to understanding the connection between the land question and the general national problem of employment (not only agricultural). It is significant that the regions of acute agrarian overpopulation are becoming the nodal points of social conflicts which outwardly do not seem to follow from land relations.²¹

One of the very widespread misconceptions in the West about Marxism is that it has supposedly accepted egalitarian distribution of land as the optimal prerequisite for a radical solution of the land question. The agrarian legislation of the Soviet state immediately after the October Revolution gave grounds for this notion. Yet the promulgation of this legislation was dictated by a definite political situation in the country as a whole and in the village in particular. In May 1917, Lenin assumed theoretically, on the basis of economic calculations, that the division of the land according to labour and food norms "does not help us find the true road for the transition from capitalism to socialism".²² But in the summer of the same year, having studied the mandates of the peasants who insisted on an egalitarian division of the land, Lenin found it necessary to support them. After the October Revolution, explaining the Party's stand on this question, Lenin pointed out that "this is the demand of the overwhelming majority of the peasants. And the idea and demands of the majority of the working people are things that the working people must *discard of their own accord*: such demands cannot be either 'abolished' or 'skipped over'".²³

Lenin's approach to the solution of the agrarian question was a comprehensive one. In this sense we agree with Myrdal's refusal to accept simple recommendations, including those that concern the division of the land. "In the absence of other protective measures, it would be erroneous to view a redistribution of land as a satisfactory long-term solution to the problems of South Asian agriculture," he points out. "The titles transferred to the actual tillers might easily be eroded by the same forces that have undercut peasant proprietorship in the past."²⁴ Myrdal notes that the indebtedness to the money-lenders is one of the factors that could separate the land from its new owners.

The division of the land, made after the October Revolution on the demand of the "overwhelming majority of the peasants", and the

²¹ On this problem see R. Ulyanovsky, "The Present Stage of the National Liberation Movement and the Peasantry", *Social Sciences*, No. 2(8), 1971.—Ed.

²² V. I. Lenin, *Collected Works*, Vol. 24, p. 500.

²³ *Ibid.*, Vol. 28, p. 309.

²⁴ G. Myrdal, *Op. cit.*, Vol. II, p. 1374.

cultivation of their allotments in later years showed the small holders the limited scale of their own aspirations and led them to the conclusion that it was necessary to unite in cooperatives. We believe that the peoples of South Asia, particularly their agricultural sections, are now going through a period of reflection and accumulation of social experience needed for the transition to the next stage of historical development. And Myrdal rightly notes that "it is in this sector [*agriculture—V. P., R.U.*] that the battle for long-term economic development in South Asia will be won or lost".²⁵

But from this and similar statements there ought to follow an unequivocal evaluation of the period which the people of this region are now passing through as a stage in the struggle for consolidating independence, for democracy in the broadest sense of the word and an advance of the productive forces and the well-being of the working sections, for eliminating ignorance, superstition and obsolete forms of consciousness. We are still faced with the pre-socialist, general democratic state of the revolutionary process, but this does not lessen the sharpness of the class struggle against both imperialism and the internal reactionary forces. To make an objective scientific analysis, a researcher must study the dramatis personae of this struggle—the classes and strata, parties and organisations, the rank and file of a given social group and political leaders. It is regrettable that in Myrdal's work South Asian society seems to be devoid of class and political divisions.

* * *

The world historical process has brought out the importance of elaborating the problems of capitalism's general crisis, the disintegration of the colonial system, the theory, strategy and tactics of the national-liberation struggle waged by the peoples of Asia, Africa and Latin America and the problems of neocolonialism—this greatest danger to the newly-free peoples. A principled position is required for a researcher if he is to arrive at truly scientific, objective conclusions about the present and the future of the Third World, a position based on a study of all the facts and processes without exception, their examination in their dialectical interconnection, with due regard for the world revolutionary prospects. The continuous generation of new social forms of struggle and their constant enrichment are compelling scholars at every new stage to evaluate in a new way the past periods in the development of the Third World. Science in general and economics in particular constantly develop not only because mankind's historical experience is steadily being enriched but also because every fundamental study, if it is based on a proper method, is becoming a landmark in understanding this experience.

As for Myrdal's books, they naturally do not introduce any fundamental changes in our understanding of the results of the sovereign development of Asian states. But in the course of a critical and

²⁵ Ibid., p. 1241.

constructive study of his works it is possible, undoubtedly, to deepen the understanding of what is actually taking place in the countries of South and South-East Asia, big and small. We also think—and this perhaps is the most important thing—that the reader will derive from the information presented by Myrdal and his thoughts additional arguments in favour of that trend of development of Third World countries which we designate as the non-capitalist, as the choice of a socialist orientation.

Myrdal's latest book *The Challenge of World Poverty*, holds out the hope that the logic of scientific inquiry and its objective analysis will gradually lead the author onto more definite political positions. The anti-colonialist critique of the scientist is more distinctly turning against the chief vehicle of neocolonialism, the US imperialists. He vigorously denounces brutal US intervention in Vietnam and points to the invariable support Western powers give to local reactionary regimes.²⁶ His analysis of the situation in Latin America (for all the disputable and, as is now evident, fallacious nature of some excessively pessimistic forecasts) leads Myrdal to the general conclusion that the main cause of stagnation and deformed development in the continent is rooted in the economic misrule of the Northern neighbour for over a century and a half. The results—the majority of the population is placed outside the pale of civilisation, national disintegration, militarisation of regimes and the status of poor relatives of rich Uncle Sam—serve as a serious warning to the peoples of South Asia about the inevitable consequences of American expansion if it is not stopped.²⁷

Unfortunately, Myrdal also refrains from recognising the positive consequences which the Third World derives in the course of cooperating with the socialist world. But as our colleague rightly remarks, "we are not working in an intellectual vacuum".²⁸ We are working in a world where the efficacy and power of human thought is demonstrated by the diverse activities of man, classes, national communities and all humanity.

²⁶ G. Myrdal, *The Challenge of World Poverty. A World Anti-Poverty Programme in Outline*, pp. 432-435.

²⁷ *Ibid.*, pp. 453-454 and others.

²⁸ *Ibid.*, p. 450.

Social Aspects of the Scientific and Technological Progress, as Seen by ILO

The social consequences of the scientific and technological revolution have attracted the attention of the International Labour Organisation (ILO) in recent years. That the ILO has raised this problem is to be welcomed since it demonstrates the desire of this international organisation to assist in the solution of important and burning problems of our age.

The report of the ILO Director-General Wilfred Jenks on the subject of technological progress and man and his environment prepared for the 1972 ILO session,* differs in form and style from the dry, excessively "special" studies and "working documents" issued by international organisations. One feels in it the desire to present a picture of the contemporary world and the social consequences of scientific and technological progress on as wide a scale as possible.

The author pays great attention, in particular, to problems of man's natural and production environment, to different aspects, including psychological, of the living and working conditions of people, to questions concerning the use of spare time and the ways of development to be followed by Third World countries.

At the same time the report, in our opinion, is not free from certain shortcomings and biased statements which considerably detract from its value and blunt its social importance.

The method of global examination of the social sphere employed by Mr. Jenks is, we believe, erroneous. In effect, it does not consider the existence in the contemporary world of two opposite socio-political systems and ignores the qualitative differences in social consequences of the scientific and technological revolution under socialism and under capitalism. Such an approach pursues, it seems to us, quite obvious ideological purpose—not only to gloss over the basic contradictions of capitalism, but also to ascribe to socialism some of the negative features of capitalist society and, vice versa, to credit capitalism with a number of attractive aspects of social progress which are a consequence of the socialist system.

The general conclusion to which Mr. Jenks arrives as a result of an analysis of the social sphere in the world is formulated as follows: "The world of unlimited opportunities which technology has made one ... is a world in global crisis" (p. 55). But a careful study of the report makes it clear that the social problems and contradictions it reveals,

* *Technology for Freedom. Man in His Environment. The ILO Contribution.* (Report of the Director-General to the International Labour Conference), International Labour Office, Geneva, 1972, 58 pp.

which supposedly are of a "global" nature and inherent in all "developed countries", actually apply only to the contemporary capitalist world.

This is confirmed by the enumeration of the components of the "global crisis"—"ecological crisis", the growing dominance of "big corporations" in society (p. 18), "bigness", "the erosion of personal freedom", as a result of the application of the latest technological devices for the purpose of shadowing trade union activists (see p. 28), "a crisis in the structure of society", "a crisis of confidence within a country", and so on and so forth. This is also confirmed by the fact that the report speaks of the absorption of small enterprises, "mobility of capital", "multinational" companies and their disorganising role in the economies of individual countries and in the world economy (pp. 19-20) and the operation of the "market mechanism" (p. 20), the "educational crisis" (p. 37), the need to establish partnership between employers and workers (pp. 43-44) and other phenomena, categories and processes which have no place in socialist countries.

Thus, the deep social crisis described by Wilfred Jenks is a picture of contemporary capitalist society. It is indicative that the non-class, "outside-system" approach to the problems examined enables the author to evade criticising the most basic flaws of capitalist society, and to conceal the deep-seated sources of the social crisis in this society.

A central place in the report is held by the problem of the environment, an entire chapter is devoted to this problem to which the author refers all the time. "Rapidly growing population, rapidly increasing urbanisation, rapid depletion of natural resources, rapidly mounting pollution: these are the elements of a worldwide ecological crisis.... There can no longer be any question that if present trends continue we are heading for catastrophe" (p. 9).

Speaking of the importance of comprehensively considering the problems of the environment in economic and social policy, Mr. Jenks points out: "We need a new conception and a new criterion of economic growth. Such a conception may require new departures in economic and social policy" (pp. 9-10). We can fully agree with the author of the report when he proposes a broader interpretation of the concept of the environment as an aggregate of the natural environment and the working environment of man, and draws attention to the "problem of the working environment which has lost none of its importance and has become in many respects more complex" (p. 14).

The report notes that one of the most acute social problems is to ensure the satisfaction of man with his work. While the educational level of working people, especially the youth, rises and the sense of human dignity grows stronger, an ever greater part of them are in the power of bureaucratic and despotic methods of management in monopoly corporations and are compelled to perform petty, repetitive labour operations of stultifying monotony. "This ever more prevalent mood of frustration at work is accentuated by the contrast between works with ever less human content and a society with ever increasing human aspirations and expectations" (p. 35).

The report also emphasises the great importance of raising the level of general education and vocational training. In present-day conditions education is not only a major factor of scientific and technological progress and economic development; it is also a means whereby working people can adjust themselves to the consequences of technological change. Education becomes a life-long process. The author notes the lag of the existing educational system and its methods behind the new demands, although he does not disclose the social roots of this lag.

It is assumed that technological progress brings with it increased leisure. But the actual situation in capitalist countries speaks of the opposite. "Average hours actually worked have therefore declined but little in most countries in recent years, and in some have risen through increased overtime working and the practice of using greater leisure to perform simultaneously a second job" (p. 40).

The measures of the capitalists to recoup as quickly as possible the cost of the expensive, highly mechanised and automated equipment is resulting in the fact that work in several shifts and round the clock is extending to new spheres with all the possible adverse consequences for the working people. Owing to the wider use of electronic computers in offices, work in shifts is also being extended to the sphere of mental labour where it was never employed formerly. This gives rise to new problems in the sphere of social relations.

The use of the latest scientific and technological achievements in the interests of an ever narrower circle of monopoly giants brings with it the erosion of personal freedom. In the report this problem is examined mainly from the angle of access to information. While an "information explosion" is taking place in the world and modern computing technique makes it possible to obtain, analyse and store a colossal amount of every type of information, the concentration of political and economic power in increasingly large monolithic bureaucracies and corporations results in access to this information becoming the monopoly of a few. In conditions of an antagonistic society the numerous technical devices specifically designed for the surreptitious obtaining of information represent a serious threat to personal freedom and also to the freedom of organisations.

Although a number of important social problems of contemporary capitalist society are raised in the report, it is surprising that in the enumeration of the many ills from which it suffers Mr. Jenks failed to mention such grave crimes against humanity as the aggressive wars waged by the imperialist powers. It is all the more surprising considering that the war unleashed by the United States against the peoples of Indochina has acquired the most inhuman, barbarous forms ever known in history, has aroused the legitimate wrath and indignation of hundreds of millions of people the world over.

One of the causes of the degradation of the social sphere in capitalist society today about which, regrettably, nothing is said in the report, is mounting militarisation, the growth of military expenditure and the rise of powerful military-industrial complexes. In addition to the colossal waste of resources—human, natural, material and

financial—the growth of militarisation in capitalist countries brings incalculable calamities to the working people: inflation, a rise in taxes and the cost of living, unemployment, systematic curtailment of the democratic liberties and trade-union rights won at the price of stubborn struggle, growth of reaction and the repressive police machine, and so on.

The report also obstinately bypasses the real achievements of the socialist countries where the advance of social production, its provision with the latest technology and rise in labour productivity are inseverably linked with an improvement in the living standard of the working people and their material well-being, with their increasingly higher educational and cultural level, the obliteration of social distinctions, the development of socialist democracy and the implementation of the programme of building a communist society. When, however, the author of the report in the context of a classless and “global” approach speaks of “mass consumption” and even that “inequalities within many of the advanced countries are being steadily reduced” (p. 48), he thereby tries to ascribe to capitalist society merits it does not possess. In particular, the process of “reducing inequalities” in capitalist countries is absolutely indemonstrable. An objective scientific analysis shows the steadily increasing inequalities in incomes and in social status between the propertied and propertyless classes in capitalist countries.¹

In Mr. Jenks's report we see attempts to credit all the social contradictions of contemporary capitalist society, including the ecological crisis, to “new technology” and “technical innovations”, to technological progress. In general, this argument is nothing new. Its profoundly erroneous and apologetic meaning was disclosed long ago by Marxist social science. Some or other social consequences of the application of any technology,—“classic” or the latest—are a result not of this technology itself, but of the social form within which it is applied. Even some serious bourgeois scholars are beginning to understand this simple Marxist axiom. John McHale, a British student of the environment, writes that the difficulties and adverse features of the technological revolution at the present stage are not immanent but are determined only by the conceptual and social approach to the use of the latest technological facilities.²

If we take the problem of the environment as an illustration, here, too, we can see that the cause of the ecological crisis in the capitalist countries is not technological progress, but the capitalist method of its development, the long neglect by private capital and the bourgeois state of capital investments in the protection of nature which are unprofitable in the short-term aspect. In most cases it is the unwillingness to combine technological progress with nature-conservation

¹ Incidentally, the report (p. 48) also speaks of widening inequalities. Contradictory evaluations, lack of clarity as to what group of countries they refer to—all this greatly confuses the arguments presented by Mr. Jenks.

² John McHale, “World Facts and Trends”, *Futures*, London, September 1971, p. 276.

measures that is leading to the intensive pollution of the environment in capitalist countries.

Mr. Jenks's attempt to equate the growing dominance of private monopolies over living conditions in capitalist society with the processes of production concentration under socialism is, needless to say, totally inconsistent.

Under the dominance of social ownership there are no contradictions in understanding and achieving the "social goals" between the state, enterprises and the people. In socialist conditions the concentration of production, the building of large enterprises and the development of production associations are regarded as the chief trend in improving the organisational structure of social production, as a means of raising its efficiency and the growth on this basis of the national income and the well-being of the people, as an important stimulus to technological progress and the general introduction of the latest technology and the easing of working conditions. As regards, for example, improving the environment, big socialist enterprises and associations, including integrated production, facilitate the employment of costly purification installations, make it possible to ensure the fullest and most rational use of raw and other materials, and to organise the best economic conditions for utilising production wastes and applying other nature-protection measures.

Although the author of the report, as we see, evades an analysis of the real sources of the social crisis in contemporary capitalist society, he is compelled nevertheless to reply to the question, whether it is possible within the framework of the capitalist system to achieve the lofty social goals discussed in the report. Pointing out that the "market mechanism is coming to be regarded as not entirely adequate for the application of technology to socially desirable ends" (p. 21), Mr. Jenks proposes measures for improving this mechanism (chiefly by extending state interference and control over socio-economic policy and also the development of "social partnership"), but categorically asserts that "market forces are not disappearing, nor are called upon to disappear".

A number of subjectivist and tendentious evaluations, like those mentioned earlier, is also contained in other sections of the report, for example, in analysing the subject of personal freedom.

While we emphatically reject Mr. Jenks's viewpoint about a "global crisis", we by no means deny that the spread of the scientific and technological revolution in socialist countries demands the solution of a number of new, at times serious problems.

Among them, for example, is the existence in the USSR of a certain discrepancy between the territorial and sectoral composition of manpower and the needs of the national economy, which makes it necessary to create more favourable socio-economic conditions for its redistribution. Another urgent problem is that of providing greater material and moral stimuli to work, utilising leisure more rationally, improving town planning and development, extending measures for the protection of nature and improvement of the environment.

Each of the existing social systems possesses qualitatively different means and possibilities for solving the problems raised by scientific and technological progress. But this by no means rules out international cooperation in a number of important spheres.

Notwithstanding the effort to encompass a wide range of social problems engendered by the scientific and technological revolution, the ILO report unfortunately is rather wanting in positive proposals. Some of them, e.g., the proposal to develop "partnership in society", are aimed chiefly at preserving capitalist social relations, at perpetuating the existing situation under which technological progress is utilised by the monopolies as a means for the most refined exploitation of the working people. Others, (for example, the proposal that the working people are expected to make certain "sacrifices" to protect the environment [p. 46], that employers and consumers must share this burden), contain demands which do not reflect the true interests of the working people.

The struggle for the genuine transformation of scientific and technological progress into an instrument of social progress cannot but turn against the domination of the monopolies, against the arms race and imperialist aggression. In this struggle the working people of capitalist countries put forward such demands as guaranteed employment, democratic education and improvement of its quality, retraining of workers without a loss in wages, public control over the introduction and use of new technology, real and effective participation of the working people in management at all levels which relies on support from below, democratic reforms in social security, the health services and protection of the environment. A number of Communist parties in capitalist countries are putting forward programme demands which provide for an improvement of legislation on the protection of nature and enhancement of its efficacy, nationalisation of enterprises whose closure is contemplated in view of their non-conformity to rules for the protection of nature, financing of measures by the enterprises themselves to combat pollution of the environment, and democratic control over the implementation of the said measures.

The sharp contradictions engendered in capitalist countries by the scientific and technological revolution dictate deep-going and far-reaching social and democratic changes which will ultimately lead to a change in the character of the existing relations of production.

VIEWS AND OPINIONS

The Human Element in the Scientific and Technological Revolution

The Editorial Board would like to supplement the academic articles in this issue, which is devoted to the theme of "Man—Science—Technology", with a review of a round-table discussion in the *Voprosy literatury* (Problems of Literature) of a play by I. Dvoretzky, entitled *Calling In an Outsider*. We have done so because its theme is the human element in the scientific and technological revolution. That was why the discussion was attended, besides professional critics, by scientists and industrial managers, and people from the factory floor.

In the conditions of an advanced socialist society, there is a close interlink between social progress and advance in science and technology, because in the course of the scientific and technological revolution, the individual's spiritual development is also a factor directly enhancing the productivity of labour. We are referring to the creation of "conditions favourable for the allround development of the abilities and creative activity of Soviet people, of all working people, that is, to develop the main productive force of society".¹

The subject of the play written by the Leningrad playwright Ignati Dvoretzky is fairly straightforward.

The management of an old-established factory with well-integrated personnel intends to improve the operation of one of the shops which has systematically failed to fulfil its production plans by calling in an outsider—inviting as shop manager a young engineer, Cheshkov by name, who is seconded from another factory which is doing excellent work. He meets with a hostile reception from the personnel of the shop he has taken on: his rigid demands for discipline and a responsible attitude towards the job evoke irritation among people who are living on the traditions of their former reputation, which has imperceptibly developed into complacency and indulgency in their working relations. The situation comes to a head, with most of Cheshkov's subordinates—engineers and foremen—resigning because they refused in the beginning to accept the new style of leadership. However, Cheshkov is able to bring about a sharp change in the sentiments of the workers and also in the running of the entire shop.

Audiences in many parts of the country—in Moscow, Leningrad, Kiev, Vilnius, Archangel', Barnaul, Vladivostok, Volgograd, Kuibyshev, Murmansk, Novokuznetsk, Petrozavodsk, Pskov, Sverdlovsk, Simferopol, Stavropol and elsewhere—have displayed keen interest in this play. Not only does it attract capacity audiences,

¹ 24th Congress of the CPSU, 1971, Moscow, 1971, p. 25.

but it is the subject of numerous conferences of theatregoers, with factory workers, engineers and students actively participating. There are probably two reasons for its success: first, the author has been able to discern society's need to understand certain processes in the sphere of present-day industry, which are of considerable social and moral significance; second, Soviet theatregoers have always shown a deep interest in serious art that deals with the realities of people's lives.

It has become obvious that the scientific and technological revolution is not restricted exclusively to the industrial sphere, but affects all areas of human life. The problems posed by that revolution include the more complex social links between the individual and his milieu, the degree of man's involvement in the fate of society, the profound psychological changes in man's consciousness, and, finally, the question of permanent moral values in their new and contemporary expression—in a nutshell, the question of humanism. In competition-based capitalist society the human element in industry is appraised, in the course of the scientific and technological revolution, merely as a factor of higher labour productivity; in socialist society man is the main object of all social development. It is for this reason that, under socialism, the scientific and technological revolution serves humanistic aims.

It was in no way fortuitous that the discussion centered on such questions as: the type of manager in present-day socialist industry; the relations between him and his subordinates; the way in which literature should study and reflect such processes. It should be emphasised here that the play in question does not deal with problems of the scientific and technological revolution in what might be called optimum conditions, i. e., at a smoothly functioning present-day enterprise. On the contrary, it deals with a clash between deep-rooted habits and concepts in a long-integrated collective, and the new demands presented by the times.

First to speak was **Alexander Yanov**, historian and literary critic, in whose opinion literature should pay particular attention to such clashes between members of an industrial team since they play an important part in our life. It is in this sphere that a new and heroic type of character has come into being, and it is the artist's business to discern this process and reflect it. It is through the agency of literature that society is first enabled to realise how the type of character so needed today is moulded.

Dvoretzky's play is characteristic in revealing the achievements and setbacks attending the advance of literature (in this particular instance, the art of the playwright) towards the cognition of the hero of today.

In A. Yanov's opinion all the shortcomings in the play stem from its being a trail-blazer in dealing with events on the factory floor. Its author has attempted to take in at one fell swoop, as it were, all the problems in industry. The play deals with too many problems; it contains too many lines of advance, and even an excess of characters—it is overpopulated. Hence, a certain superficiality both

in the handling of the overall problem and in the depictions of the people in the story; that is why some of the persons in the play lack personality. Even so, its main characteristic lies in its having brought onto the stage the dramatic elements inherent in industry itself, its inner theme of innovation, something inherent in its current condition.

The author has produced characters born of the dramatic set-up in present-day society and the industry it is built on; this "industrial backbone" is a strong point of the play, something it has brought to the fore and placed in the public spotlight.

The next speaker was **Georgy Kulagin**, managing director of the Sverdlov Engineering Corporation in Leningrad, who expressed the opinion that the clash depicted by the playwright is typical of our times, so that the very appearance of an outsider invited to take over an important job is almost always dramatic in its essence. His arrival is often the cause of an acute struggle, which ends, more frequently than not, in the victory of the collective, but sometimes of the newcomer over the collective. The clash that has arisen on this basis is depicted in the play with sufficient energy and convincingness.

From the very outset, Kulagin went on to say, the main character in the play, Cheshkov, is presented as a reserved, taciturn and strong-willed man. Yet, at the climax of the play, the scene in which dissatisfaction with the new factory manager finds vent in his subordinates leaving a conference in a body and tendering their resignations, Cheshkov is seen as a helpless philosopher.

The entire question, the speaker went on to say, should be posed on a broader plane: how does the essence of industry as a self-organising system fit in with the role played in it by the human factor?

The elements of any system try to find within it a position offering the greatest advantage. The relations between the elements in a system are marked by a number of features—cooperation, antagonism, or parasitism. In any collective, individual sections or persons may be inclined to place their personal aims, even if professional, above those of the organisation as a whole. This is an objective and built-in quality of any complex system; it is not something that is innately vicious. Clashes cannot be avoided, since conflict is inherent in any system. The main task is "to reduce the pressure in conflicts" and give support to cooperation between the elements. Herein lies a major field of activity for leadership. The leader must run the system in such a way that will ensure the overall aims of the team, the collective, always standing higher than individual aims. The leader gives the collective unity of action, for otherwise, in present-day production, with its complex technology and clear-cut division of labour, with each member performing only a definite function, all and everything may fall apart. Of course, our socialist society possesses such powerful cementing forces as the organising role of the Party, and the unity of the class interests of all members of a collective but even in these conditions the industrial leader is faced with many complex problems of controlling the operation of so complex a system as a shop or factory, which is why so much depends on his personal qualities.

Georgy Kulagin went on to ask whether Cheshkov is capable of accomplishing such tasks. He has all the qualities required for that but, in Kulagin's opinion, the methods he uses to ensure proper teamwork among his numerous and experienced personnel—even if they are in the doldrums—are too inflexible, too blunt, and can hardly lead to success in actual life.

Reality calls for more intelligence and flexibility than are revealed by Cheshkov. Our people are fully aware of their rights and have a sense of their own dignity. No other society in the world is as democratic as ours is; no other country has a more highly developed system of protection of the rights and interests of the working man. We have every right to be proud of such achievements and rejoice in them. In our country, management is based, in the main, on convincing and educating people. Yet, it would be mistaken to disregard the fact that there are some who misuse the precious achievements of our system and are forgetful of their obligations to society. Today's "machine civilisation" calls for discipline and expects us to renounce some of the freedom once enjoyed by the caveman. It should be remembered that placed in the service of the socialist ideal, the machine has delivered millions from hunger and cold. That delivery—that freedom for all—has to be paid for in organised discipline and creative labour. Such is the message of the play.

Talk of humanism in general, said Kulagin in conclusion, understood as the individual's freedom to disregard all social demands is misleading to the reader and the theatregoer: not only will production come to a standstill but society cannot exist without the discipline and purposefulness that Cheshkov demands. His tactics are not always the right ones and he may show a lack of breeding; his knowledge of the arts may be insufficient, but the main thing is that he demands the labour discipline that we need so much today. He is a man of our times, lives and works in our midst, and I am glad, Kulagin said, that the author of this play has given us a convincing portrait of such a man.

Kulagin's point of view was supported by Yuri Kuzmenko, Cand. Sc. (Philol.), a literary scholar, who saw much of the value of I. Dvoretzky's play in its taking up arms against the flabbiness still so often to be met in our midst, and calling for a strict and up-to-date understanding of socialist humanism.

The scientific and technological revolution, of which, in our conditions, the economic reform is a component, is linked up with the rationalisation of production which, in one way or another, affects the interests of millions of people. All those who are actually redundant in the sphere of production and management should be released and sent wherever there is a shortage of labour power. Thousands of small-scale enterprises should be merged to form large-scale and economically viable bodies; wherever necessary, labour should be mechanised and intensified, the flexibility of production, its ability to constantly re-equip itself technologically should be greatly enhanced, as should the flexibility of personnel and the more rapid and guaranteed replacement of less capable personnel by such that display greater abilities.

All these requirements are full of dramatic situations and clashes that are rooted in society and stem from the progress of our society. Of course, the resolution of such conflicts cannot be achieved without a struggle, without opposition to the new from the old, or without results that are far from pleasant or advantageous to all and sundry. All this is humane in its essence, and, moreover, intimately connected with our general and overall approach—from each man according to his abilities, to each man according to his labour.

With all its shortcomings, the speaker went on to say, the play in question expresses society's need of improvements, not only in industry alone but also in the most varied range of human relations in this, the main sphere of our life. The play brings the message that we cannot advance without discarding certain outmoded habits, no matter how distasteful some collectives and individuals may find the process. It depicts a young character capable of performing his duties in keeping with the new social tasks, a specialist and leader who does indeed think in terms of the scientific and technological revolution. In the speaker's opinion, this is the "outside" from which Alexei Cheshkov has entered the story and our perception as viewers of the play.

However, it should not be thought that the industrial theme is the only one in our socialist art. There are far more reasons to foretell the continued existence and development of the vast variety achieved by Soviet art in respect of themes, subjects and clashes. However, there can be no doubt that, within the framework of this wide range of variety, the industrial theme (in the broad sense of the word) can and should come in for far more attention. The processes now under way in our industrial, scientific and agricultural collectives are of too great importance to society; the human emotions linked with the resolution of questions which may seem pertaining exclusively to the job are too numerous to be bypassed by art.

It was no accident that theatrical critic, Arkady Anastasyev, D. Sc. (Arts), also established the link between Dvoretzky's play and the tradition of the effective and publicist participation of Soviet dramatic art in posing the fundamental problems of our times.

The action in the play, he emphasised, develops in a concrete situation at a factory, this giving it the nature and impact almost of a documentary drama. That is why the problems raised in the play are of interest to anybody engaged in industry. At the same time the ideas expressed about the play by G. Kulagin present considerable interest: while he is an engineer by profession and a leading industrial manager, he sees the problems raised in the play as something far broader than the framework of the subject in question; what he sees is a discussion of important ethical problems, this, in A. Anastasyev's opinion, accounting for the play's success.

What is most important is that the concrete events in the story and the clash of interests therein provide a backdrop for what may be considered the personal experience of the reader and the viewer. Of course, engineer Cheshkov comes up against a difficult problem, but this is no exceptional set-up: any one of us has had

occasion—probably in a quite different situation—to stand up for deep convictions and have to tell others, who may be very fine people, the harsh truth that they have failed to keep in step with the times.

The main character in a play is often presented as a hint at the discovery of a new socio-psychological type—a man of the scientific and technological revolution. That is true but, the speaker went on to say, the typicality is far broader in this particular instance: with all his individual features, errors and a certain aloofness, Cheshkov is seen as a positive ideal, a moral example in socialist society. Since we are dealing with a drama, this ideal is revealed in the surmounting of obstacles.

It is common knowledge that the scientific and technological revolution has presented new demands to industrial leaders, said sociologist Vladimir Shubkin D.Sc. (Philos.). One can probably speak of two fundamental elements in the make-up of a character such as Cheshkov. In the first place, we see him as an ideal type of industrial leader of the epoch of the scientific and technological revolution, one who embodies its basic demands. In the second place, he is seen as a concrete person, who exists in life. Anyone who has seen the play at the Moscow Malaya Bronnaya Theatre (production by A. Efros) may at first think that the author has chosen the second path and tried to show an actually existent person of our times. This, however, brings in its train a question already raised by G. Kulagin: has the author been fully consistent in this presentation? In this connection, one may also ask in what measure the favourable outcome of the play is justified.

In sociological science, the speaker went on to say, there is an important department known as the sociology of organisation. A glance at the play from the viewpoint of this branch of science leads one to the conclusion that Cheshkov could hardly have achieved victory in his all-out battle against tradition. I do not wish to say, the speaker continued, that, to quote from the Russian saying "a single warrior is no fighting force". Sometimes even a single warrior, if well-equipped and able to influence the course of events, may achieve a lot. However, in his clash with the collective and the management of the new enterprise, Cheshkov does not possess such means of influence.

Cheshkov, as I see it, has not achieved an understanding of the tremendous significance of human relations in industry, both in shaping the new type of citizen and in accomplishing purely economic tasks. That is why he cannot be called a character typical of the scientific and technological revolution in the conditions of our social system. That is why I find it hard to agree with G. Kulagin, who has unreservedly taken the side of Cheshkov. After all, the team working in this particular shop have rejected not the targets set by Cheshkov but the categorical methods he uses. This is an important aspect, which should not be lost sight of.

Alexei Cheshkov's challenge to the traditions established at this factory was not to the liking of critic Boris Anashenkov either.

Cheshkov turns a blind eye to the history of this factory, to all recollections of the way the staff carried on under enemy fire during the Great Patriotic War; he disregards the long-standing friendship established in those arduous times. One must agree that the heroic history of the factory should be preserved as a tremendous moral and even economic stimulus. That is why the explanation of Cheshkov's negative attitude to all and any traditions—he is a businesslike man and has no interest in anything that has no bearing on the job—lacks conviction and, moreover, reduces his stature. All the very correct remarks he makes about the demands presented by the economic reform do not save the situation, for they are perceived more as the author's standpoint than that the main character has arrived at himself.

True, the play's sub-title describes it as a chronicle of our times, a *genre* which might seem to justify a certain superficiality in the author's view of the main character. However, we are discussing not only a particular play but present-day literature regarded from a definite angle—the way in which it is related to actuality. It is a commonplace that all and any kind of machinery can be designed in a relatively short space of time. However, the way in which people regard such machines, whether they see industrial production as something of vital concern to them or, on the contrary, as an alien and hostile force—this is something that cannot be decreed, or created by pious hopes; what is needed here is a social revolution, in which each historical stage is accompanied by a definite socio-economic policy of the state, a policy which takes stock of the features and specifics of the given stage.

There is taking place in our country a rapid and broad process of "rejuvenation" of the working class and the industrial intelligentsia, whose ranks are annually replenished by millions of young people, this being, without any doubt, a marked feature of our times. It is, however, regrettable that there exist few if any outstanding works that show, in terms of art, how the individual is integrated in the working collective. One will raise no objections to tales, novels, or plays describing to us throughout the entire narrative how a young man and a young woman discover each other; yet one would like to learn how a young person is met at the factory, what relations he enters into with his workmates, how his factory is functioning, and whether or not these are things that hold his interest. If such matters are not taken up, no convincing, compelling and socially significant character can be created. Ignati Dvoretzky has attempted to create such a character, but he does not seem to discern it in a clear light. That is why he has not produced a social type that is true to life; the programme that Cheshkov comes out with is eclectic and even naive in certain respects, so that his ultimate victory lacks conviction.

Even more critical of Cheshkov was Andrei Nagatkin, chief engineer at the Manometr Instrument-Building Works in Moscow. We have heard a great deal today about Alexei Cheshkov as a young industrial leader. While my Leningrad colleague G. Kulagin has admitted that Cheshkov shows inflexibility in his actions and sometimes

rides rough-shod over his subordinates, he has yet found it possible to come out unreservedly in his defence. Nevertheless, other speakers have distinctly voiced the idea that Cheshkov is not excessively interested in what we call a human factor in production.

The scientific and technological revolution, A. Nagatkin continued, is a time of economic reform and naturally confronts us all with the problem of leadership. This problem is focal in I. Dvoretzky's play, and I consider this as testimony to the author's closeness to the interests of the times. I agree also that Cheshkov is no abstract figure but embodies a certain type of our times, a concrete figure in present-day production.

What I do doubt is whether he embodies a progressive trend. I object not merely to the methods he uses but to the very system of his attitude towards others. This I would call an attitude from a position of strength. I find it objectionable not only for considerations of an abstract humanism, a kind of sentimentality to which people of my age are sometimes prone. I cannot accept it for economic considerations as well.

I realise that he is full of energy and even agree that he is a serious and even talented engineer; yet I say that he is immature as an industrial leader, and moreover illiterate, because he disregards the human factor. The socialist system of human relationships stresses the importance of conscious discipline, a sense of duty. Disregard of such factors in the system of industrial management means giving a leadership that is illiterate.

Cheshkov lacks the human touch and is given to tough action—now reprimanding one of his engineers, now depriving another of his bonus, production indicators being the only yardstick used with total disregard of the human element in the system. True, Cheshkov comes out on top, but does so at the author's behest, and not because of the nature of things. He has not won a victory but has it brought to him on a platter.

Even if Cheshkov has indeed come up against traditions in his new collective that are detrimental to the job, I would like to note, in passing, that the very problem of tradition has been somewhat simplified in the play, as I see it. A tradition cannot be called harmful only because it is something that binds people together with a bond of the past, which they are loath to forget. Overfamiliarity is a shortcoming, but, on the other hand, a socialist collective cannot function properly without a sense of comradeship and traditions.

If the traditions at the factory described in the play have indeed degenerated into a system of glossing over shortcomings and displaying nepotism, then they must be smashed. One must agree with this attitude, which makes it all the harder to believe in Cheshkov's victory over the force of tradition. One can easily imagine that so experienced and skilled a manager as Cheshkov will bring a malfunctioning mechanism under control and set it working properly. However, a collective is not a machine, no matter how complex. It cannot be brought under control by force and professional skill alone; other means and methods are needed, and all factors, both within and

outside the sphere of production, have to be taken into account. The emergence of a new tradition is a most complex process, and Cheshkov as depicted in the play is incapable of exercising the role of initiator of progress.

Konstantin Shcherbakov, literary critic of *Komsomolskaya pravda*, focused attention on Cheshkov as a human type in the process of development. The make-up of this main character, he emphasised, at once evoked discussion and interest. As I see it, he said, I.Dvoretzky has been keen-sighted in noting a living social type that is as yet only taking shape and has not yet achieved completeness. Like any human type at that stage, he is confronted by a choice of different prospects and various roads which may be at variance at any given moment.

The conflict that I.Dvoretzky has described in his play is an actual one, in the process of movement and change. That is why a work of art cannot resolve it in any single terms. With me personally, certain doubts have arisen: are the methods of struggle which Cheshkov uses for a good cause, justified even in the extreme circumstances described in the play? This is no ideal or simple question, as is borne out by the contradictory opinions expressed here by so respected and authoritative industrial managers as G.Kulagin and A.Nagatkin, in respect of Cheshkov's make-up and mode of action. Since such people directly connected with the sphere dealt with in the play enter into such heated argument, that means that the author has created a character that is real and in keeping with the times; he has shown an important clash of interests and has brought it up and attacked it in a most topical manner. In showing a section of reality without any embellishment, the playwright has provided theatres with ample room for thought as to the directions along which the situations, characters and conflicts he has described should develop.

In his address, K.Shcherbakov dealt with the production of the play at the Moscow Malaya Bronnaya Theatre, where the main character is presented as basically a kind and mild man who has arrived at the irrevocable conclusion that he is duty bound to display the utmost firmness and inflexibility, for otherwise he cannot smash the system of relations that has developed at the factory. This good-natured man has to suppress his innate kindliness in the conviction that it is unnecessary and even detrimental to the job in hand. However, the action of the play shows Cheshkov's return to his true self, but, as it were, on a new basis. He begins to realise that firmness and even implacability are needed at the moment for the restoration of work discipline and of a conscious and responsible attitude to the operation of the shop, for a sense of complacency and of smug satisfaction with past successes have gone too far. Yet, kindliness and humanness in all and any circumstances are not superfluous qualities and should not be cast aside. That is why, even in situations that call for painful decisions, Cheshkov remains humane. Of course, he does not arrive at this optimum decision off-hand but through clashes with others and in overcoming their indignation and resentment, reactions which are not always groundless. Cheshkov's humanness, as revealed in the finale of the Malaya Bronnaya Theatre production, finds ex-

pression, not only in his working for conditions that will make honest and ethical work possible, but also in his establishing for himself the truth that so worthy an aim should not permit any disregard of consideration for others.

The critic went on to say that, in his opinion, the play provided possibilities for another treatment of the main character in the story, that is, a man confident of himself, persistent in his efforts, without the least doubt of the correctness of his acts or of his being in the right; he remains this kind of man all the time, between the rise and the fall of the curtain. It is regrettable that there still exist young gifted people who are forgetful of the ethical aspect of things and of the others they have to work with. This treatment of the plot would make it possible to create a character on a new plane and give rise to new questions.

Thus, while the discussion produced the unanimous opinion that the conflict the action is based on is of social significance, the speakers differed in their appraisals and their understanding of the nature of the main character. For that reason it was of interest to them to hear what the author himself thought of the play and the character he had created.

I would like to define the tasks set by the play in far more modest terms, said **Ignati Dvoretzky**, I wanted to give a story of a young man—engineer and Communist—who—and this should be emphasised—has made a free choice of the difficult working and human conditions he has placed himself in. He has himself searched out these difficulties because he finds no interest in a calm and well-ordered tenor of life. This is a pattern of behaviour for thousands and hundreds of thousands of young people who wish to establish what they consider their ideals.

The factory of today is a complex organisational structure—a blend of technology, science and economic factors, an environment in which acute clashes of passions and character are possible. We writers, whose knowledge of such matters is not of the closest, find it hard even to imagine the kind of situation a young man may find himself in, if he lives in the thick of events at the factory, has at times to cope with super-complex technical and organisational tasks, and comes into daily contact with hundreds of people. If we add to this that this young man is highly energetic, loves his work, shows the utmost persistence in achieving his ends, has a profound knowledge of the job, and demands the same of his subordinates—one can imagine the stormy life he has let himself in for. That is how I see Alexei Cheshkov.

With his dedication to work in industry, Cheshkov cannot stand aside from the economic reform in progress there, or from problems of industrial management. This is the sphere of all his work and the meaning of his life. However, the ethical aspect of the matter is the chief thing both for the theatre and for reality. How does Alexei Cheshkov behave? Does he show sufficient character in defending his working principles? Why is he somewhat unmindful of others? Are these inherent features, or part of the tactics he is obliged to use in

the course of a bitter struggle. Why is he so reluctant to show kindness? Wherein does his ultimate and genuine kindness lie? Is he a just and honest man? Can it be said that his enjoyment of life is inseparable from his work, from his dedication to his profession? Is he capable of infecting others with his ideas and his enthusiasm? All these, in my opinion, are matters that deserve attention.

I first met a man who served as a kind of model for Cheshkov during a morning briefing at the factory. Although there was nothing outstanding in his appearance, everything about him breathed the spirit of the utmost professionalism. Everything he said, the pauses he made, and the notes of anger or irony in his intonation spoke of a thorough knowledge of the matter of hand. He did not waste a minute of time. His questions, replies and instructions were clear-cut. I could discern in him a kind of inborn rejection of empty talk or demagogy. He somehow typified our epoch of the scientific and technological revolution, which offers so much, but is so exacting and calls, first and foremost, for conscious and creative discipline and professionalism.

Of course, the questions posed in the play contain a hint of the replies to them, but it is to the audience that the final say belongs here. It is their opinions and their appraisals that are decisive for me.

The round-table discussion was summed up in the concluding remarks made by **Vitaly Ozerov**, D. Sc. (Philol.), Editor-in-Chief of the *Voprosy literatury* (Problems of Literature) journal and secretary of the Union of Soviet Writers.

This round-table discussion in our editorial office has been worthwhile, first and foremost, because it has led us to certain general reflections on the make-up of our typical contemporary and how he should be depicted in terms of literature.

The author of the play has shown insight into the emergence of a new human type in the process of its being moulded and taking shape. Perhaps it would be more exact to say he has seen the features of that type, features that are highly characteristic, and are not quite what we are used to. Of course, we have all come up against people like Cheshkov, but we have not yet had time to get a first-hand knowledge of the type. By blending highly characteristic features in a single image, the playwright and the theatre have made him a new reality—both aesthetically and in terms of reality.

It has been said here that Cheshkov is a businesslike man and it is very significant that audiences have not shown any indifference to him. The problems he grapples with form a complex whole, in which are intertwined the economic needs of production, the social drives in our development and the ethico-aesthetic norms of the period of the scientific and technological revolution.

I. Dvoretzky's play has shown what is the main and definitive strand in his complex unity, and how difficult it is to achieve the necessary harmony in the matter. Cheshkov's main interest lies in creative work, which gives expression to the force of man's mind and the beauty and rationality of technological thinking and organisational skill.

In giving effect to his principles, he is obliged to overcome the resistance put up by those who favour the old methods. This struggle cannot but affect a man who is somewhat awkward, rigid and not always likeable. His make-up is quite complex and even contradictory. What we have here is not a lily-white "ideal character" of the literary schemes but a well-defined individuality.

I have found Cheshkov true to life because, with his firm conviction that his methods of management are the right ones, he is persistent in following up the line he has chosen. True, in his dedication to the job, he does not always find the right approach to those he is working with, and this is seen today as a grave shortcoming, as a break in the splendid tradition that arose in the first five-year-plan periods—the blending of the businesslike and the humane. It is not fortuitous that this aspect of the matter has evoked many critical remarks from participants in today's discussion. Our times do not call only and exclusively for the scientific organisation of labour; while engaged in laying down the material foundations of communism, Soviet society devotes no less attention to the education of a new, communist type of individual.

We see Cheshkov in the early stages of his new career. The experience and maturity he will acquire may very well enable him to enter more deeply into the moral atmosphere of his collective. It is only along that road that he may expect to score genuine successes, the more so because he is already giving his subordinates object lessons of moral behaviour grounded in moral principles.

A second reason for the wide range of opinions expressed on the essence of the conflict depicted in the play is the way the author has presented it. While voicing approval for I. Dvoretzky's play as a whole, the participants in the discussion showed both objectivity and a critical approach in pointing out that Cheshkov is not yet a vivid artistic type but only a well-defined outline, a study. Thus, there is an impression that the lyrical scenes in the play have been inserted simply to give some warmth to an excessively rationalistic nature. It is not fortuitous that our theatres have had either to alter such passages or else cut them down.

As for the other people in the story, stricter criticism is in place here, and not only because these personages are all not equally expressive. What the play lacks is a broad sweep of the social links, something that would fully reveal the nature of the main character in its strong and weak points.

While the author has understood the needs of present-day industrial production, he has not been quite up to an even more important task—depicting it on the social plane. He has been unable to depict, with sufficient artistic force, the alignment of social forces, or to show the incentives in the activities of Soviet people, which are defined by the moral and political aspirations of our times. In the conditions of developed socialism, a far greater part belongs to moral factors than can be seen in the play under review. The 24th Congress of the CPSU set the following historical task: "...organically to fuse

the achievements of the scientific and technological revolution with the advantages of the socialist economic system"²

Of course it would be naive to expect to see the accomplishment of this tremendous task through the prism of a single individual, moreover one at a stage of development, in which he is still far from the harmony that society as a whole is striving towards. Yet, very much depends on the stand taken by the author (here I am not referring to I. Dvoretzky alone): I have in view the sweep and the philosophical depth of the scenes depicted; the intensity of the ideas and thoughts expressed, which take the main characters beyond the framework of the everyday; the inclusion of people representative of various social sections and moral viewpoints; situations which vividly and convincingly reveal the inner depths of human nature. I shall not enumerate all the creative opportunities awaiting the artist—they are most varied and cannot be tabulated. What is important is that good use be made of those opportunities which broaden the usual framework of "industrial literature" in its old understanding.

Our discussion has produced much that is controversial, but almost all speakers have agreed on one thing: a condescending attitude to any work of art given in an industrial setting is a patent manifestation of snobbery. Only a work of art should not be reduced to purely technical descriptions, since social and psychological content is the prime duty of the artist. This, of course, also refers to dramaturgy, play-writing.

It is obvious that this discussion in the editorial offices of *Voprosy literature* have been fruitful: whatever problems of the present-day literary process have been brought up, the emphasis has been on the importance of literature studying and reproducing in terms of art the times we are living in, which are so full of struggle and creativity, and on the part played by literature in moulding the new type of citizen.

G. Lvova,
Editor, *Voprosy literature*

² 24th Congress of the CPSU, 1971, Moscow, 1971, p. 69.

BOOK REVIEWS

M. A. СУСЛОВ. *Избранное. Речи и статьи*. М., «Политиздат», 1972, 695 стр.

M. A. SUSLOV, *Selected Speeches and Articles*, Moscow, Politizdat Publishers, 1972, 695 pp.

The collection of speeches and articles by M. Suslov, member of the Political Bureau and Secretary of the Central Committee of the CPSU, treats of major problems in the socio-political life of the Communist Party and the Soviet Union, and in the development of Marxist-Leninist theory. The collection covers more than thirty years in the political and theoretical activity of the author, reflects three decades in the history of the Party and the State, rich in events of great historic importance.

For all the diversity of problems discussed, the book constitutes a single whole. It coherently spells out the political line of the Communist Party, gives a profound Marxist-Leninist analysis of the processes under way in Soviet socialist society, and of important international events, shows the selfless struggle of the CPSU to build a communist society in the Soviet Union, to further strengthen the world socialist system, the international revolutionary process and world peace.

The articles and speeches under review give the reader a comprehensive picture of the road traversed by the CPSU and the Soviet people in the

past three decades, of the great achievements of the Soviet Union in the building and defence of the new, socialist society.

1.

The book opens with materials relating to the Great Patriotic War. Suslov sets forth the main directions of the Party's policy in the war years, analyses the causes and character of the war, shows the significance of the victory of the Soviet Union, exposes the social nature of fascism and its misanthropic ideology and policy. The grim war years, the truly sacred war of the Soviet people against German fascism, mankind's bitterest enemy, is shown with great force as is also the selflessness and heroism of Soviet people at the front and behind the lines, the titanic work of the Party in organising the crushing defeat of fascism, and the lessons of the Great Patriotic War.

The speeches and articles covering the years 1944-1946 reflect the Party's activities in healing the ravages of the war, rehabilitating the economy destroyed by the fascist invaders, and putting it back onto the rails of peaceful socialist construction. These problems were particularly acute ones in the young Baltic republics which had joined the USSR just shortly before the war. Suslov shows the Party's struggle to consolidate the Soviet system and the socialist way of life, to restore industry and agriculture in the Lithuanian Soviet Republic particularly, to develop its culture, promote the alliance and friendship of the working people

An editorial printed in *Pravda* of November 19, 1972.

of Lithuania with all the peoples of the USSR.

Much space in the book is devoted to the development of the Leninist teaching of the leading role of the Communist Party, to questions of Party building. Enhancement of the Party's leading role at the present time follows from the magnitude of the internal and international tasks that have to be tackled and their exceptional complexity, from the growing political maturity and creative activity of the masses, the extension of socialist democracy and the increased requirements demanded of social management; it follows from the need to improve the communist education of the working people and constantly to enrich Marxist-Leninist theory. The CPSU has vigorously combated the revisionist attempts to minimise the role of the Party and its Leninist organisational principles. The CPSU's consistent struggle for a Marxist-Leninist understanding of the role of the working class and its Communist vanguard is, to cite the fraternal parties, of great international significance.

The author discusses at length the tasks of communist construction set by the CPSU. In his article "The CPSU, the Party of Creative Marxism"¹ Suslov writes: "The Report of the CPSU Central Committee by Leonid Brezhnev, the Directives for the new five-year plan, the speeches of the delegates and all the Congress documents and decisions, embody the collective thought, the collective experience and the collective will of the Party. They prehensively reveal real fundamental questions related to the improvement of a developed socialist society and the laying of the material and technical basis of communism in the USSR, questions of the further cohesion and development of the world socialist system, the prospects of the struggle for peace, democracy, social progress and the national independence of the

peoples of the world and questions of the unity of the international communist movement. The results of the Congress proceedings clearly show that in all its activity our Party relies on the Leninist ideological legacy, firmly follows the Leninist line and creatively solves the current problems of social progress."

The speeches and articles familiarise the reader with the economic problems of socialism and communism, the principles and methods of the socialist economy, with the problems of management, and the measures to create the material and technical basis of communism, and to raise the defence potential of the country.

The book reflects the big work carried out by the Party to liquidate the harmful consequences of the personality cult, to overcome subjectivism and voluntarism, to affirm in the life and activity of the Party and the state the Leninist principles of collective leadership, the Leninist standards of Party life. It shows the Leninist principles underlying the Party's activity, the tasks tackled by the Party to strengthen its ties with the masses and improve Party leadership, methods of scientific elaboration of policy, the principles of the selection, education and placing of personnel. The author examines questions of Party guidance of the activity of state and economic bodies and the mass organisations of the working people. "Our Party", Suslov writes, "is a living, creative organisation. Collective leadership, the electivity and accountability of Party bodies criticism and self-criticism—all these are important conditions for displaying initiative, disclosing mistakes and shortcomings in work and of finding ways for removing them, for developing the activity of Communists."

The author centres particular attention on such important tasks as developing inner-Party democracy, improving the standards of Party life, enhancing the role and responsibility of Party organisations and of every Communist.

¹ See *Social Sciences*, 1972, No. 1(7).

2.

The CPSU regards ideological work as an integral part of its activity in communist construction. Proceeding from the propositions and conclusions of its 24th Congress the Party attaches paramount importance to the further spiritual development of Soviet society, to the communist education of the working people. This aspect of the Party's work is analysed by Suslov most exhaustively.

The CPSU's ideological activity rests on the firm foundation of Marxism-Leninism, on a profound study of the objective laws of social development, on the processes under way in Soviet society. The author accentuates that the Party is vigorously opposed to divorcing ideological work from life, from the pressing tasks of communist construction, to scholarship, to an abstract and sketchy approach to things.

Questions connected with the further development of the social sciences, the component parts of Marxism-Leninism—philosophy, political economy, scientific communism—are discussed at length. Suslov writes on this score: "The main thing on which the 24th CPSU Congress focuses the attention of our social scientists is the theoretical elaboration of the basic problems of a developed socialist society, scientific substantiation of the ways and means of its gradual development into communism." The author underscores the importance of studying the works of Marx, Engels and Lenin, the various documents of the CPSU and the international communist movement, of mastering the methodological and theoretical legacy left us by the classics of Marxism-Leninism. The book also examines the main questions concerning the development of Soviet culture, literature, art and education.

In ideological, educational and scientific work there can be no slackening of the struggle against reactionary bourgeois ideology, there can be no

peaceful coexistence between socialism and capitalism in the ideological sphere. A conciliatory attitude to the reactionary bourgeois ideology, connivance at it, nationalism and chauvinism and also negative features such as money grubbing, parasitism, drunkennes—these are all incompatible with socialism and communism.

Elaboration of the Marxist-Leninist doctrine underlies the theoretical activity of the CPSU, furthers the Soviet Union's advance to communism. The Party's theoretical activity is centred on questions concerning developed socialism, the building of the material and technical basis of communism in conditions of the scientific and technological revolution, the further consolidation of socialist democracy and the Soviet state, changes in the social structure of Soviet society and enhancement of the leading role of the working class and the Communist Party, ways of consolidating the socio-political and ideological unity of Soviet society. All these questions are given wide coverage in the book under review.

The author devotes special attention to the role of the working class in communist construction. Suslov notes that the CPSU proceeds from the Leninist precept that elucidation of the historic role of the working class as the creator of the new society is the main thing in Marxism. The working class of the USSR, which is in the van of revolutionary transformations at all stages of socialist development, by uniting around itself all working people has shown itself to be a true leader of the people. In conditions of the scientific and technological revolution the leading role of the working class is anything but "diminishing", as bourgeois ideologists and revisionists of all kinds claim. On the contrary, the working class to a still greater extent than before acts as the decisive force in building the new society.

The book comprehensively substantiates the CPSU's conclusion

about developed socialist society. Speaking of the dialectics of socialist society's development the author notes that in its advance socialist society more and more fully realises its potentialities, perfects itself creating, in the process, the prerequisites for the transition to the next, higher phase—the gradual development into communism. The development of socialism and the building of communism are a single, continuous process in which each new stage is linked with the preceding one, is a higher stage in society's progress.

The author shows that developed socialist society has a powerful material and technical basis, an allround developed economy, that it ensures steady growth rates in production and labour productivity on the basis of up-to-date machinery and the wide application in production of the scientific data. Characteristic of developed socialism are mature social relations that have taken shape on the basis of the complete predominance of socialist property, the liquidation of all exploiting elements and the assertion of the socio-political and ideological unity of society. Developed socialist society has its corresponding political superstructure—the state of the people embodying true democracy. A high level of culture and of public education, the universal dissemination and assertion of the Marxist-Leninist world outlook are features of developed socialist society.

The elaboration of questions concerning national relations, and the dialectics of the national and the international is of great importance for the development of a single, multinational state. The CPSU has ensured the establishment of a union of nations, liberated from the capitalist yoke, a union based on absolute confidence, equality, voluntariness, on fraternal unity in the struggle for the victory of socialism and communism. The ever closer drawing together of the peoples of the USSR, their ever closer cohesion, the flowering of the

the economy, science and culture, of all spheres of public life in the republics are being achieved on the basis of developed socialism, and in the course of communist construction. "The fiftieth anniversary of the world's first multinational socialist state," writes the author, "is an event of the greatest political importance, of tremendous international significance. It is a nationwide celebration of the unity, friendship and fraternity of all the nations and nationalities building a communist society, of the triumph of the CPSU's Leninist nationalities policy, of proletarian internationalism." Analysing national relations in the USSR the author emphasises the importance of persistent and systematic work to educate the masses in a spirit of socialist internationalism and Soviet patriotism, the importance of combating the survivals of the past in this most complex of spheres in public life.

3.

In the book under review the reader will find an analysis of such fundamental questions of the contemporary international scene as: peaceful coexistence of states with differing social systems, the possibility of averting war in the present epoch, the different forms of transition to socialism by different countries, the attitude to social-democratic parties, the prospects of the national-liberation and anti-imperialist movements and the further ways of their development, the importance and need to combat present-day nationalism, Right and "Left" opportunism. Defining the position of the CPSU on all these questions the author shows that the CPSU has always been a party of creative Marxism-Leninism, a party that embodies in its activity unity of revolutionary theory and revolutionary practice.

Considerable attention is devoted to the elaboration of fundamental questions related to the development of the world socialist system, the

general laws and specific features of its formation; to an analysis of imperialism at the present stage; to a study of the nature of the socioeconomic transformations in the developing countries. In its foreign policy, elaborated by the CPSU, the Soviet state proceeds from positions of principle. Firm repulse of the imperialist aggressors is invariably combined with flexibility in pursuing the course charted, with a constructive approach to the settlement of pressing world issues. The foreign policy of the CC CPSU and the Soviet Government is directed towards ensuring the Soviet people's peaceful labour, safeguarding socialism, the freedom of peoples and universal peace. The growth of the might of the Soviet Union and its active foreign policy in realising the Programme of Peace put forward by the 24th CPSU Congress play an important role in world politics.

The author focuses attention on such key issues as the strengthening of peace and the relaxation of international tension, exposes imperialism's designs and actions directed against socialism and peace. Much space is given to problems of unity of action of all revolutionary and democratic forces and especially unity of the international communist movement.

Suslov shows the international character of Leninism. The Marxist-Leninist doctrine knows no state frontiers and is the ideological and theoretical foundation of the international unity and fraternity of the working people of all lands. Marxism-Leninism gives the answers to the most urgent problems of our day.

Наука Союза ССР. М., Изд-во «Наука», 1972, 428 стр.

Science in the USSR, Moscow, Nauka Publishers, 1972, 428 pp.

In a short historical period the USSR made a leap in the develop-

"Leninism," writes the author, "always was, is, and always will be the scientific basis for correctly solving the complex and difficult problems that arise on the way to the world victory of communism. Consistently to defend the purity of this doctrine, to develop it in a Leninist manner, to skilfully and comprehensively use the Leninist legacy—such is the common duty of the great army of Communists, of all anti-imperialist fighters."

The book contains a scientifically-based criticism of contemporary bourgeois conceptions and theories, of the reactionary ideology of anti-Communism and anti-Sovietism, of Right and "Left" revisionism, petty-bourgeois adventurism and nationalism.

The author shows the CPSU's fruitful efforts to consolidate the international communist movement on the principles of Marxism-Leninism and proletarian internationalism. "In its relations with all the fraternal parties," Suslov writes, "our Party regards as of paramount importance the interests of the common struggle against imperialism and for the triumph of peace, democracy, national liberation, socialism and communism."

* * *

In the selected speeches and articles M. Suslov raises questions that are of great ideological and sociopolitical significance. The book will play major role in the ideological and educational work of the CPSU, in arming its cadres, all Communists and working people with the great ideas of Marxism-Leninism.

ment of science unparalleled in scale and significance. A vast network of scientific institutions was established numbering today 5,307 and with a scientific personnel of 1,002,900 research workers at the end of 1971.

The Soviet Union is seen by the world as a country of advanced

science, the first to blaze the trail into outer space and to the peaceful use of atomic energy, a country with a powerful industry and defence potential. The Soviet state is the first socialist state in the world built on scientific principles. And science occupies a place in it such as it never occupied before anywhere. Science and socialism are indivisible. Education and science forged ahead at particularly rapid strides in the Union Republics. They all today have their own Academies of Sciences with numerous scientific institutes, their own national scientific schools. All this makes the road covered by Soviet science particularly instructive for many peoples of the world.

The book under review, published by the USSR Academy of Sciences for the 50th anniversary of the formation of the USSR, treats of this subject.¹ The collection opens with the article by Academician M. Keldysh, President of the Academy of Sciences, "The Multinational Union of Soviet Socialist Republics and the Development of Science". In it the author thoroughly analyses the state and prospects of Soviet science, shows the enormous significance of the formation of the USSR in uniting the country's scientific forces.

The organisation of science was founded on new principles, elaborated with the active participation of Lenin. His "Draft Plan of Scientific and Technical Work" was the programme document that marked a turning point in the activity of the Academy of Sciences and of science throughout the country. It clearly formulated the idea that the Academy of Sciences' activity is indissolubly linked with the general tasks of socialist construction. From the very

beginning the development of science became the common affair of the entire people.

Keldysh discusses the present state of science, its most important trends and achievements. The Communist Party's constant concern for science, the author stresses, has "enabled it to occupy leading positions in world science in a number of important spheres. This has made possible the solution of such 'problems of the age' as mastery of nuclear energy, exploration of outer space, automation of management processes on the basis of electronic computers".

The theoretical and practical activity of the CPSU in the sphere of national relations is the subject of the article "The Social and Ideological Principles of the Drawing Closer Together of Nations and Nationalities" by Academician P. Fedoseyev, Vice-President of the USSR Academy of Sciences. In this article the author examines the theoretical aspects of the solution of the nationality question under socialism, shows the significance of the Great October Revolution in the formation of a fundamentally new type of relations between nations and nationalities. Fedoseyev devotes much space to the Communist Party's nationalities policy today, to the questions related to the formation of a new historical community of people, the Soviet people, the drawing closer together of nations and nationalities under developed socialism, the prospects of the further development of national relations.

Science in the Russian Federation is discussed by Academician M. Millionshchikov, Vice-President of the USSR Academy of Sciences. "At present there are more than 2,700 scientific institutions in the RSFSR," he writes. "Its 630,000 scientific workers, professors and instructors include over 16,000 Doctors of Science and more than 145,000 Candidates of science." The development of the economy and culture made possible the establishment of branches of the

¹ The book was published by the Progress Publishers in English and French (*Science in the USSR*, Moscow, 1973, 366 pp.; *La science en USSR*, Moscow, 1973, 340 pp.), and by the Mir Publishers in Spanish (*La ciencia en la Unión Soviética*, Moscú, 1973, 408 pp.).

Academy of Sciences in many regions of the RSFSR, including the Siberian Branch. The author stresses the particular importance of the Party and Government decision regarding the organisation of the Far Eastern and Urals scientific centres of the USSR Academy of Sciences and Higher School Centre in the North Caucasus.

The article "The Flowering of Science in Soviet Ukraine" by Academician B. Paton, President of the Academy of Sciences of the Ukrainian SSR, and the article "Science in Byelorussia" by N. Borisevich, President of the Academy of Sciences of the Byelorussian SSR, tell the reader of the great achievements of science and culture in the two republics. The Ukraine today boasts 135,000 scientific workers of whom more than 3,000 are Doctors of Science and 33,000 Candidates of Science. Byelorussia has 173 research institutes, about 22,000 scientific workers and instructors, nearly 6,000 Doctors and Candidates of Science.

The articles by G. Abdullayev, President of the Academy of Sciences of the Azerbaijan SSR, "Scaling the Heights of Science," by Academician V. Ambartsumyan, President of the Academy of Sciences of the Armenian SSR, "Growing Cooperation", and by Academician I. Vekua, President of the Academy of Sciences of the Georgian SSR, "Science in Soviet Georgia", contain rich factual material about the growth of science and the major scientific problems tackled in the said republics, describe the scientific trends and schools which are of all-Union importance and which have become world famed. Since 1940 the number of scientific workers in Azerbaijan increased by more than 9 times, in Armenia by 12.6 times and in Georgia more than 6 times.

In the articles "The Sources and the Development of Science in Soviet Uzbekistan" by A. Sadykov, President of the Academy of Sciences of the Uzbek SSR, "Science and the

Productive Forces of Kazakhstan" by Sh. Yesenov, President of the Academy of Sciences of the Kazakh SSR, "Soviet Kirghizstan and Its Science" by K. Karakeyev, President of the Academy of Sciences of the Kirghiz SSR, "Soviet Tajikistan and Its Science" by M. Asimov, President of the Academy of Sciences of the Tajik SSR, "Science in Soviet Turkmenistan and the Assistance of Fraternal Peoples in Its Development" by P. Azimov, President of the Academy of Sciences of the Turkmen SSR, the authors stress the tremendous importance of the mutual assistance rendered by the peoples in the development of science in these republics. Since 1940 the number of specialists with a higher education engaged in the national economy increased 18 times in the Kazakh SSR, 16 times in the Turkmen SSR, and 15 times in the Tajik SSR.

Scientific development in Moldavia and the Baltic Republics is discussed in articles "Soviet Lithuania and Its Science" by Y. Matulis, President of the Academy of Sciences of the Lithuanian SSR, "Soviet Moldavia and Its Science" by Y. Grosul, President of the Academy of Sciences of the Moldavian SSR, "Science in Soviet Latvia" by A. Malmeister, President of the Academy of Sciences of the Latvian SSR, and "Science in Soviet Estonia on the Ascent" by A. Veimer, President of the Academy of Sciences of the Estonian SSR.

Drawing on the rich experience of scientific construction in their respective countries and with the assistance of the other Union Republics the peoples of the Baltic Republics and of Moldavia achieved signal results in a historically short period. Thus, by the beginning of 1971 Lithuania had 86 scientific institutions, Moldavia—66, Latvia—98 and Estonia—71.

That the successes of Soviet science became possible as a result of the CPSU's consistent implementation of the Leninist nationalities policy is the thought that runs all through

the book. The authors note the Communist Party's constant concern for science, stress the tremendous mobilising force of the 24th CPSU Congress decisions which inspire Soviet scientists to new achievements.

The fundamental work by leading Soviet scientists, the presidents of the Academy of Sciences of the USSR and Academies of Sciences of

the Union Republics, contain rich theoretical and factual material in which the reader will find many interesting things about science in our time, its achievements, problems and prospects.

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B. УВАЧАН. *Путь народов Севера к социализму. Опыт социалистического строительства на Енисейском Севере (Исторический очерк)*. М., Изд-во «Мысль», 1971, 391 стр.

V. UVACHAN, *The Road of Northern Peoples to Socialism. Experience of Socialist Construction in the Northern Reaches of the Yenisei (Historical Essay)*, Moscow, Mysl Publishers, 1971, 391 pp.

The author of this monograph is a well-known Soviet scholar, an Evenki researcher into the history of Northern peoples. Although his work deals with the peoples inhabiting the Northern reaches of the Yenisei, it goes far beyond the bounds of local research for the scope of its material and depth of generalisation. The major conclusions drawn by the author can be applied with full right to all the peoples of the Soviet North which have made the leap from the primitive-communal system to socialism, a leap without precedent in history.

Academician A. Okladnikov points out in his Preface to the book that the peoples of the North have traversed a long and intricate path in history. Contrary to the unscientific, reactionary conception of the ideologists of exploiting classes who held that the tribes and peoples in the North were "non-historical" and represented the "primitive" or "lower races" and had no culture of their own, the inhabitants of the North have, in reality, created original cul-

tures. Soviet historical science, above all archaeology, has proved that these cultures have deep roots. A primitive art of rock painting and engraving amazing for its dynamism and ethnographic uniqueness has been found in the remotest corners of Siberia, in the taiga and tundra, particularly in Chukotka.

Nevertheless, despite their participation in the general progress of culture, the peoples of the North were extremely backward. Accession to the Russian state was an important landmark in their history. On coming in contact with the Russian working population, they borrowed from them some economic and cultural habits. But under tsarism any essential changes in the life of the "natives" of the North was out of the question. The low level of the productive forces, the grim natural conditions and brutal exploitation and oppression doomed them to a beggarly existence and extinction.

After the peoples of the North were incorporated into Russia their working masses closely linked their destiny with that of the Russian working people and their struggle for liberation.

The Great October Socialist Revolution was a radical turn in the historical destinies of the Northern peoples. It saved them from extinction and indicated the way to a new, free, happy and prosperous life in the fraternal family of the Soviet peoples.

Lenin, speaking at the Second Congress of the Communist International in 1920, formulated the follow-

ing classical proposition: "With the aid of the proletariat of the advanced countries, backward countries can go over to the Soviet system and, through certain stages of development, to communism, without having to pass through the capitalist stage."¹

Guided by Lenin's teaching, the Communist Party tried to ease to the utmost the transition by the peoples of the Soviet East and North from feudal and pre-feudal relations to socialism. This policy aroused scepticism and vicious attacks on the part of the enemies of Leninism. Thus, Right-wing Social Democratic leaders alleged that it signified a return to the illusions of Narodism. This was clumsy sophistry. In reality, Lenin's teaching about the advance of peoples from pre-capitalist relations to socialism, by-passing capitalism, has nothing in common with the Narodnik concept of "communal socialism". It stems not from recognition of the magic force of the community, but above all from the great revolutionary transforming force of the victorious proletariat and from the rendering of assistance to peoples who fell behind in their economic and cultural development.

Fraternal support of Russia's proletariat was of tremendous significance for the Northern peoples. The numerous facts adduced by the author show the great concern of the Communist Party and the multinational Soviet state to the small peoples of the North, and disinterested assistance given by the envoys of the Russian people and other peoples of the country.

The Leninist policy of fraternal mutual assistance aroused all the formerly neglected peoples to independent creative endeavour. The striving for knowledge and culture grew among the indigenous population and the first national organisers and educators appeared from among this population. Socialist construction

gradually became the vital cause of the working people in the North. Their national consciousness grew stronger with every passing year and their socio-political and labour activity increased: "Everything was done not only for the indigenes, but also by the indigenes themselves," V. Uvachan writes. This was one of the most important and decisive victories of the Leninist nationalities policy.

Tremendous obstacles that arose in the way of the historical transition of the peoples in the North from primitive backwardness to socialism were surmounted in the final count. This was due to a great extent to the consistent application of the Leninist nationalities policy, to the observance of Lenin's demand for considering local distinctions in national development, being flexible in the choice of forms and methods of accomplishing urgent tasks. The author analyses the specific implementation of the fundamental problems of state, economic and cultural development in the North. The Party roundly rejected the mechanical transfer of methods and forms applied by other peoples for which the population in the North had not been prepared. For example, the first Soviets in the North were set up on clan lines. And this was expedient: clan relations, although in a stage of disintegration, still greatly influenced the life of the indigenous population. And the author is right when he states that "such a form of power was the most accessible to the indigenes and corresponded to their socio-economic and cultural level." The process of organising co-operatives also assumed specific forms. For districts in the Far North where the population engaged in hunting, fishing and reindeer breeding, mixed societies were set up to combine the functions of a consumer, supply and producer co-operative. The nomadic way of life also dictated the need for a special type of school—a boarding school. In a word, socialism entered the life of the Northern peoples through specific forms.

¹ V. I. Lenin, *Collected Works*, Vol. 31, p. 244.

The prewar years saw great social-ist achievements. True, there were more unaccomplished tasks here than in the case of other peoples. During the Great Patriotic War the Soviet North made its contribution to the common victory over Nazi Germany and militarist Japan.

The last chapter of the book entitled "On the Road to Communism" offers summary data which illustrate the achievements of the Northern peoples in political, economic and cultural progress. The author describes the wealth of the North and the rapid industrial development of the region. The role of the North in building the material and technical basis of communism is on increase. Many installations have been built here, including the world northernmost (Messo-yakha-Dudinka-Norilsk) gas pipeline and the Khantai hydroelectric power station. The Arctic North is becoming extensively electrified.

The achievements of the Northern peoples in the cultural revolution are shown in the book in great detail. Facts and figures speak of the truly

sweeping changes in the North in Soviet times. The peoples who even had no idea of a written language have now attained universal literacy, have created their own literatures and developed their own scientific and artistic intelligentsia. In Taimyr, there were 683 persons with a higher and secondary (complete or incomplete) education per 1,000 employed persons and in the Evenki area, 589 people in 1970.

A new historical community of people, the Soviet people, has arisen in the course of building socialism in the USSR, the nationalities of the North being its organic part. They are linked with all the other nations and nationalities of the USSR by bonds of unity, by the common way of life and spiritual make-up.

Uvachan's monograph is a valuable contribution to Soviet studies of the North, to the historiography of national relations and socialist construction in the USSR.

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И. М. МАЙСКИЙ. *Воспоминания советского дипломата. 1925-1945 гг.* М., Изд-во «Наука», 1971, 711 стр.

I. M. MAISKY, *Reminiscences of a Soviet Diplomat. 1925-1945*, Moscow, Nauka Publishers, 1971, 711 pp.

In this book, as in his earlier published memoirs (they have been translated in full, or in part, into 14 foreign languages), Academician I. Maisky generously shares with the Soviet and the foreign reader his reminiscences of his long career as a Soviet diplomat.

The book under review covers the London period (1925-1927, 1932-1943). In it the distinguished Soviet diplomat acquaints the reader with many valuable facts and interesting obser-

vations about the complicated and tortuous development of Anglo-Soviet relations in the diplomatic; as well as in the economic and cultural spheres, gives a clear picture of "who's who" with relation to the Soviet Union. There were two opposite groups in the "corridors of power". The group led by Curzon, Deterding, Baldwin, Chamberlain, Halifax and Simon whose class fear, political prejudice and personal hatred took precedence over the state interests of their own country and who sought to injure Anglo-Soviet relations by instilling a spirit of enmity, hostility and irreconcilability. They were countered by such leading political figures as Lloyd George, Sinclair, Beaverbrook, Eden and Vansittart and they had many supporters. During the Second World War also Churchill was compelled to share

their views to a certain extent. Here political realism and common sense, a true understanding of national interests prevailed over class fear. These statesmen with a different degree of activity and consistency sought to establish friendly relations with the Soviet Union, relations of mutual rapprochement.

The big role played by monopoly capital in imperialist states when shaping government policy is well known. In his book Maisky clearly shows the role of London City in Anglo-Soviet relations, specifically in the case of the trade agreement of 1934. It was called a provisional one, but it will soon be forty years that it has been in operation. Pains-taking work by the Soviet ambassador in England preceded the conclusion of the economic agreement on terms acceptable to both sides. The story of the negotiations, described at length, makes interesting and instructive reading.

Not seeking in this book to devote special attention to Anglo-Soviet cultural contacts the author tells us in passing, so to speak, of his meetings with Bernard Shaw, Herbert Wells, Beatrice and Sidney Webb, about the Soviet delegation that attended the Shakespeare celebrations at Stratford-on-Avon, and about Academician I. Pavlov's visit to England.

Much space is devoted, however, to another "personage"—the English people. Maisky writes about their attitude to the Soviet Union, how they behave in critical situations, at turning points in the history of England; and the world, in the history of international relations. He mentions in this connection the British general strike of 1926, the actions of the English working people against N. Chamberlain's and Halifax's Munich foreign policy, the mass expressions of sympathy for the Soviet people in the grim years of the Great Patriotic War. "I recall," Maisky writes, "how these sentiments were particularly tempestuously voiced at the end of June 1942, the first an-

niversary of Hitler's attack on the Soviet Union. Ruling England and the City also expressed their sympathy but 'in moderation'. The same goes for the Big Press which in the main reflected their sentiments. Not so the masses. They gave full rein to their fervour, to their enthusiasm... A wave of big meetings devoted to the anniversary and to the question of a second front swept the country." People gathered in the thousands to express their admiration for the heroic Red Army, for the exploits of the Soviet people and to demand of their government prompt and decisive aid to the Russians. The description of these events (supplemented with well chosen pictures) holds the reader's interest as also the description of the fund-raising campaign in aid of the Red Army and the accompanying flood of letters that poured into the Soviet Embassy. In the first two years alone of the Great Patriotic War, writes Maisky, £650,000 were collected for the Soviet Red Cross and over 10,000 letters expressing warm gratitude for this aid were written by the Soviet Embassy personnel in London.

The reader will find most interesting the author's pen portraits of his colleagues, his fellow-workers. Before the reader's mind's eye there passes a whole gallery of diplomats of the Leninist school—prominent figures of the People's Commissariat for Foreign Affairs, ambassadors, trade representatives, counsellors, staff members of the various Soviet organisations in England. The author writes in this context how important it is for a diplomat to be closely acquainted with the country to which he has been accredited, to acquire first-hand knowledge by making frequent trips to different cities and towns, and visits to industrial enterprises, political and public institutions, and to have broad contacts with the most diverse sections of the population of the country.

Another feature of the *Reminiscences* the reader will find interesting

are the many facts it contains outside Anglo-Soviet relations and concerning the most decisive and crucial events in the history of international relations. These include Munich, the Soviet-Anglo-French talks of 1939, the "phoney war" in the West, England's attitude to Hitler and the Nazis.

Many documentary works and scientific studies of how Czechoslovakia was betrayed and sold out have already been published. Maisky's reminiscences contain additional important facts, throw new light on the history and the consequences of the shameful deal between Hitler, Mussolini, Chamberlain and Daladier, and also on the preparation in the "English kitchen" (or to be more exact, preparation of the failure) of the meeting of diplomatic and military representatives of the USSR, Great Britain and France in Moscow in 1939. The betrayal of the interests of

his country by the then British Prime Minister and his followers and their anti-Sovietism are borne out by new facts, as is also the insolvency of the attempts by falsifiers of history to shift the responsibility for the breakdown of collective security in the years before the war onto the Soviet Government.

In his *Reminiscences of a Soviet Diplomat* Maisky more frequently than in his earlier published memoirs employs the method of comparing personal impressions with the "letter" and "spirit" of diplomatic documents as interpreted by Western political figures in books published by them. Such an approach is to be welcomed: the collation, comparison and checking of data contained in different sources is a must when preparing a scientific work, even if it happens to be memoirs.

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Русско-китайские отношения в XVII веке. Материалы и документы в двух томах. Т. I, 1608-1683. М., 1969, 613 стр.; Т. II, 1686-1691. М., Изд-во «Наука», 1972, 835 стр.

Russian-Chinese Relations in the 17th Century. Materials and Documents in Two Volumes (Vol. 1, 1608-1683, Moscow, 1969, 613 pp.; Vol. 2, 1686-1691, Moscow, 1972, 835 pp.), Nauka Publishers.

The second book of the two-volume documentary series *Russian-Chinese Relations in the 17th Century*, edited by S. Tikhvinsky, Corresponding Member of the USSR Academy of Sciences, has just come out. It was compiled by the Institute of the Far East and the Oriental Institute of the USSR Academy of Sciences, together with the State Archives of Ancient Acts and provides the readers and scholars with a comprehensive selection of documents

pertaining to early relations between the two countries.

Volume 1 carries 214 documents, the greater part of which are being published for the first time. The text, the date and the authenticity of those documents previously known have been rechecked. The documents in the collection cover the period from 1608 to 1683, or the "pre-treaty" period in the history of relations between the Russian Government and the representatives of the two ruling dynasties of China, Ming and Ching.

At the beginning of the 17th century, during a period of rapid expansion of the Russian empire along its eastern borders, vague reports reached the authorities in Siberian towns of a distant and powerful state solemnly named The Great Chinese Kingdom and lying somewhere beyond the steppes and mountains. Information in the collection indicates that these communications caused the Siberian *voevodes* to equip semi-official embassies to China. The

volume carries accounts of such visits by Siberian Cossacks, rendered in rich and vivid language, approaching the colloquial, and abounding in precise descriptions and apt specifications. They show China at the beginning of the 17th century as it was seen by those simple Russian people. Those who went on these first journeys, I. Petlin, E. Vershinin and their companions, were received favourably by the Chinese officials in Peking. This is testified by the deeds. At that time, however, relations with China did not develop any further because it was remote and the road there was difficult and perilous.

The Russian envoys met quite another reception in Peking after the Manchou invaders seized power and the Ching dynasty was established on the throne. These events coincided with the growing interest for China in the Russian Government circles. It was caused by the appearance in Moscow and on the markets of Siberian towns, of goods brought from China by go-between merchants and Mongolian envoys. These purely economic considerations caused the first official Russian Embassy to be set up in Peking. It was headed by F. Baikov and founded in the middle of the 17th century.

However, the offer to establish mutual trade and constant diplomatic relations was strongly opposed by the ruling Ching dynasty. Haughty treatment by the authorities, the persistent imposition of humiliating court ceremonies, as well as a reluctance to negotiate on equal terms, forced the embassy to leave the country without having achieved its purpose. Another major Russian embassy led by N. Spafary, a known diplomat and scholar, met the same fate in the 1670s.

The history of the embassies, the detailed description of the route, the country they travelled through, its life and its population are presented in the reports of the envoys. Although, diplomatically the missions were a failure their reports were immensely valuable as sources of con-

crete contemporary knowledge on Ching China in the third quarter of the 17th century.

Besides information supplied by diplomats, the first volume includes a considerable number of documents on the settling and administrative development of the Amur region by Russians in the 1640s-1660s. These were selected in terms of relevance to the relations between the two countries. The penetration and settlement by Russian wayfarers on the Amur, as well as the exploration marches they undertook along the right-bank tributaries of the river, soon alarmed the Ching Government. It regarded the presence of Russians and the fact that a large group of local population led by prince Gantimur had voluntarily become Russian subjects, a threat to their ancestral possessions in Central and South Manchuria, although the area was a fair distance from these parts. The dispatches sent in by E. P. Khabarov and O. Stepanov reflect the changing attitude of the Manchu reconnaissance groups they encountered on their way. Their former tactics of watching from a distance were gradually changed to aggressive hostility: attacks on Russian settlements, isolated Cossack units and driving away into the interior of Manchuria of the Daur population which was tax-bound to the Russians.

Volume 2 of the series essentially contains the information of a single source, hitherto unpublished, namely F. Golovin's report on the 1686-1691 embassy. It is a voluminous work and contains a daily record of all the activities of the embassy which was authorised to deal not only in foreign, but also in home affairs. This work is a round-up of all the documents connected with the embassy. These are presented verbatim in the text and blended with the ambassador's direct narrative. The journey from Moscow to Zabaikalie, the forming of the escort unit, the steps pertaining to the management of the Nerchinsk and other provinces, are but a few in the

long list of preparations, in which the embassy was involved and which took several years to accomplish. But the main task of Golovin's mission (and the main component of the report) were the negotiations that took place in Nerchinsk in 1689 and ended in the signing of the Nerchinsk Agreement, the first to be concluded between Russia and the Ching empire.

Despite the extensive literature on the subject, much remained vague and open to discussion in the history of the talks and the interpretation of the text of the agreement. The full and thoroughly prepared publication of this extremely valuable source sheds additional light on the issue, while the comprehensiveness and the authenticity of Golovin's report make it an important source not only for the study of the history of relations between Russia and China, but also of Mongolian principalities and their relations with their neighbours, the history of Siberian and Far Eastern peoples, and a number of other problems.

As well as the main Russian document, relevant documents of the Chinese side have been included as supplements. These lend special value to the collection. Among them are translations of extremely interesting notes by the two Western Jesuits, who participated in the negotiations on the Manchu side as interpreters and intermediaries. Published in Russian for the first time, are the Manchu-Chinese documents compiled in two historical Chinese works ("Strategic Plans for Suppressing the Russians" and "The Biography of Lang Tang"), which confirm that the Amur claims of the Ching Government were unlawful. The Russian, Manchu and Latin texts of the Nerchinsk Agreement are also given in supplements. The latter two are provided with translations into contemporary Russian.

The varied, pertinent sources favour objectivity, allow crosschecking and accurate criticism of the data

they contain. The documents show both sides in preparations for the talks. But if Russian effort was directed at the protection of their frontiers, the actions of the Ching authorities on the eve of the negotiations were of an indisputably aggressive nature. Manchu detachments had for several years been accumulating strength to invade Russian territory. They intended to oust the Russians from regions they have long developed and to destroy their strongholds and peasant settlements on the Amur and its tributaries.

The documents reveal the treacherous tactics of the Ching officials. Thus, after having dispatched to the Russian camp the letter with their offer to begin negotiations on territorial problems (in fact, the one causing Golovin's embassy) the Manchu warlords, without waiting for the answer, began the siege of the Albazin fortress, a Russian outpost on the Amur. The same trend is manifest, when the methods of Russian and Ching diplomacy are compared. Thus, while Golovin scrupulously observed all the conditions agreed upon for the negotiations, the Manchu side violated their very foundations by bringing a huge army to Nerchinsk and by antagonising the local peoples and tribes against the Russians.

Not only the Russians, but the Jesuits who participated in the negotiations, saw that the territorial claims set forth by the Manchu-Chinese side in Nerchinsk were groundless and provocative. They were supported by the presence of 17,500 picked troops centred near Nerchinsk by the Ching authorities for the period of negotiations. Publication of authentic documents disposes of the myth in Chinese historiography about the voluntary and mutually advantageous nature of the Nerchinsk Agreement.

The part of the documents dealing with landmarks set by the agreement to demarcate the frontier is of special interest. It reveals the reason for the misunderstandings which arose soon after the Agreement was concluded

and which later deepened and shows it to stem from insufficient geographical knowledge of the disputed territory. At that time the sides knew neither the names nor the directions of the mountain ridges, the rivers or the contours of the sea coast. This resulted in a most uncertain borderline including sections without demarcation, and led to different readings in the very texts of the agreements

inexplicable at first sight. The situation motivated a peaceful revision of the clauses in the Agreement by Russian diplomatic bodies in the middle of the 19th century and establishment of a definite Russian-Chinese border in the Far East.

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Японский милитаризм (Военно-историческое исследование).
М., Изд-во «Наука», 1972, 376 стр.

Japanese Militarism (Military and Historical Research), Moscow, Nauka Publishers, 1972, 376 pp.

Amilitary historical study, *Japanese Militarism*, is a work by a group of Soviet orientalist. Using the Marxist-Leninist methodology, they trace the origin and the development of militarism in Japan and make an economic, political and ideological analysis of this intricate process.

One of the book's doubtless merits is the profound and well-argued exposure of the historical roots of Japanese militarism, which is specific and unlike any other form of militarism in the world. Such an exposure is essential for a correct, scientifically grounded concept of the contemporary Japanese imperialist military clique, linked in its origin with the samurai of feudal Japan. The authors were guided in their work by Lenin's basic views on the military and feudal features of Japanese imperialism.

The book traces the formation of the samurai caste, its transformation into the ruling class (second half of the 12th century), the role they played in the feudal wars and in uniting Japan, and shows the greed and adventurist nature of the Japanese feudal invaders. It exposes the causes of internal decomposition and the subsequent shedding of class features by the military nobility, the alienation of the samurai from the

land and their turning into a purely parasite class. Speaking of their part in the political and economic life of the country, Academician E. Zhukov, the author of the first chapter, gives a detailed study of the roots of samurai ideology, the author draws on detailed factual information and shows how the ideology of the military feudal class changed with its material standing. Yet it always remained the ideology of the privileged militarists, accustomed to despise the commoner and regard loyalty to the feudal lord, fearlessness and other similar qualities as the highest manifestation of "samurai valour".

A basic feature of the book is that the economic, political and ideological aspects of Japanese militarisation are not considered separately, but as a whole.

A comprehensive analysis is given of the fall of the Tokugawa shogunate, which, due to the capitalist structure born in the depths of the feudal system, was caught in the economic crisis of the '50s and the '60s of the last century and succumbed under the blows of samurai opposition. Its mainspring was the low-rank samurai gentry, striving to obtain a "privileged and parasitic existence at the expense of the peasantry" after the fall of the shogunate. It is emphasised in this connection that "the rank-and-file samurai, taking part in the 1868 revolution constituted, as a rule, a reactionary force, striving to protect its feudal privileges. It was guilty of direct betrayal of the truly par-

ticipants participants in the events, the peasant masses and the urban proletariat".

B. Sapozhnikov, author of the second chapter, considers the specific features of Japanese imperialism and militarism in the light of Lenin's thoughts on the bourgeois state of Japan (19th century-1917). He analyses the causes which made Japan turn to expansion directly after the somewhat incomplete bourgeois revolution of 1867-1868, and led to the fall of the shogunate and the inauguration of imperial power. A whole series of political, economic and ideological steps preceded the aggressive actions. These steps included the introduction of compulsory military service in November 1872, the opening of the military academy in 1873, and the founding of a big navy. The system of education which was reorganised for the purpose in 1871-1872 is also known to have played a significant part in preparing the young generation of Japan for service in the army.

The author further traces the connection between the Japanese military and the economic successes at the turn of the century and the subsequent cultivation of militarist and chauvinist ideology. The growth and consolidation of the Japanese state, as well as the seizing of new territories, created fertile soil for militarist ideas.

The following point should also be emphasised. The authors of this study on Japanese militarism have drawn on a wealth of factual material and have devoted considerable attention throughout their research to depicting the actual state of the Japanese army at any given stage in its development. They list details of the numerical strength, structure and logistics of the different arms. The tactical and technical specifications of the infantry, artillery and other armaments are also included.

The historical analysis of the various aspects of Japanese militarism is made in its development as a changing, living social organism, where

constantly present features are continually supplemented by new ones, relevant to the given historical period. This penetration into the very essence of the inception and development of Japanese militarism would not have been possible without a thorough economic analysis of the period.

The work exposes the expansionist plans of the Japanese monopolies regarding the Far East and the vast territories reaching the borders between Asia and Europe. It traces the preparation and course of the intervention against the Soviet republic and shows the basic causes of the crisis in the political and military strategy of Japanese imperialism.

Also noteworthy in this book is a detailed study of the nature of Japanese fascism (the 1930s) and the exposure of its kinship with the German-Nazi dictatorship and several other specific features (Ch. IV). A follow up is also given of the origin and the motive forces of military fascist actions and their impact upon the process of militarisation of the country, as well as on its economic, political and ideological preparation for the Second World War.

The fifth chapter is devoted to Japanese militarism during the Second World War.

The authors felt it necessary to go into great detail regarding the part played by American imperialism in preserving and strengthening Japanese militarism in the postwar period (Ch. IV). A. Markov, the author of this chapter, points out that "from the very first day of the unilateral occupation of Japan by American forces, Washington was constantly concerned with preserving the reactionary foundations of the political regime in the country as well as the economic basis for the future restoration of the military potential". An analysis of the extensive material leads the author to conclude that the US ruling circles while promoting a resurgence of Japanese militarism

tendedo to keep it under control, so as to render it harmless when necessary.

The seventh chapter occupies an important place in the book under review and deals with the present

state of the Japanese armed forces: the army, the navy and the air-force.

V. Tikhonov

Литературное наследство. Том 82. А. В. Луначарский. Неизданные материалы. М., Изд-во «Наука», 1970, 672 стр.

Literary Heritage, Volume 82. A. V. Lunacharsky, Newly Published Materials Moscow, Nauka Publishers, 1970, 672 pp.

The publication some years ago of the *Collected Works* of A. Lunacharsky, prominent figure in Soviet culture, and the Soviet state's first People's Commissar of Education, was a major event in Soviet literary life. They acquainted the reader for the first time with the versatile activity of this gifted interpreter of Russian and foreign literature and outstanding critic. And yet much remained either unpublished or buried in editions that have long since become bibliographic rarities. This lends exceptional interest to the recently published volume of *The Literary Heritage*, dedicated to Lunacharsky, and carrying texts and documents bearing on his activity that have not been published before. It is a valuable contribution not only to the study of the work of Lunacharsky, but also to the history of literature, the theatre, criticism, and literary science.

Thanks to the diversity of the materials presented in the volume the reader gets a more distinct picture of Lunacharsky's personality.

The main attention is centred on the '20s and the beginning of the '30s. However, the collection also includes early documents: the pre-revolutionary period (fragments of correspondence with Romain Rolland, some articles on West European literature), "Autobiographical Notes" (1907), a synopsis of a paper

on "Henrik Ibsen as a Moralist" (1900). The entire volume is committed to the task of presenting Lunacharsky's work in its intrinsic unity for all the diversity of his spiritual life. His intensive activity is permeated with a wealth of ideas, ideas that continue to be of no small interest in our day. These largely concern methodological questions, in which the philological sciences have been showing increasing interest in recent years and to which Lunacharsky paid great attention. The book shows Lunacharsky as a mature follower of Marxist-Leninist philosophy and aesthetics, and the extensive materials connected with his popularisation of Lenin's teaching on culture, Lenin's analysis of literature, are especially interesting in this respect. Lunacharsky always emphasised the exceptional importance of this heritage. His penetrating reading of Lenin's articles on Tolstoy is most astonishing. To cite but one example. The published documents revive Lunacharsky's dispute with his critics about his incorrect interpretation of Lenin's appraisals of Tolstoy. Countering these ungrounded accusations, and noting that a "negative attitude to Tolstoy on the whole" cannot be inferred from Lenin's remarks, Lunacharsky perceives the textological mistake (*point d'appui* of his opponents) which made its way into Lenin's article "Leo Tolstoy as the Mirror of the Russian Revolution". The printed text read "his [Tolstoy's—N. F.] views, harmful as a whole" while in the original, in Lenin's text it was written "taken as a whole". This is a rare example of penetration into the essence of Lenin's brilliant articles on Tolstoy. Here, not only the flawless logic of Lenin's thoughts but their very word-

ing reproduced by thorough reading of the text.¹ Extremely interesting are Lunacharsky's reminiscences about his meetings with Lenin, about his talks with Romain Rolland about Lenin (see "Letters to Romain Rolland", also abstracts from the diaries of Romain Rolland).

Research into the inner laws of creativity, into the nature of the arts is amply presented in the volume. It may be in the form of a paragraph pursuing practical purposes, of an article "Worker Correspondents and Literature", intended for the *Rabochaya gazeta* (Worker's Paper), or it may be in the form of a speech or report on some occasion: a brilliant impromptu speech on the occasion of the jubilee of Valery Brusov a great Russian poet, a report at the 7th All-Russia Congress of Art Workers, letters, remarks, etc. The important thing is that for Lunacharsky these ideas to which he repeatedly returned were for him an intrinsic element of life. He does not coldly contemplate these laws from the "side lines", they are his very existence. He makes the work of a writer or a critic the object of closest study and draws upon the wealth of his enormous erudition in the process. The content of the writings often go beyond the bounds set, under which the texts are grouped, according to subject matter or the problem discussed. In such cases the specific features of Lunacharsky's critical method come to the fore—that of introducing into his analysis the technique of comprehensive philosophic and aesthetic research, the method of dialectico-materialistic approach to the profound objective laws of development in the sphere of art.

¹ For details on the textological mistake and on publications of Lenin's articles, available to Lunacharsky see: Azarova N. "Lenin's Articles on Tolstoy and Literary Criticism of the '20s", *Yasnopoliansky sbornik* (articles, materials, publications), Tula, 1970.

The effectiveness of Lunacharsky's studies lies in their capacity to go beyond the confines of mere abstract constructions and always to treat of pressing problems of cultural development, in their purposeful impact upon reality, (e. g., his highly topical report "Pressing Questions of Literature"). This also applies to his publications on the urgency and importance of exploring the fields of methodology, techniques of scientific research, the science of sources, archive filing, etc. These materials, significant by themselves, acquire a special importance by appearing side by side with material from Lunacharsky's correspondence. They show him as one of the organisers of the publishing industry in Soviet Russia and also of scientific research. Enlightening, too, are the materials connected with Lunacharsky's work in the Literary and the Big Soviet Encyclopaedia, and the criteria of rigid terminologic precision which he insisted upon in his recommendations (chapters: Lunacharsky as contributor to *Literary Heritage*, Lunacharsky as editor).

The materials published often give an insight into the dynamics in the creative process of Lunacharsky the critic, the researcher in literature. These new materials which make it possible to draw comparisons, are as highly interesting as those known to the reader before. Such, for example, is Lunacharsky's speech at Brusov's jubilee or the article dedicated to the memory of Emil Verhaern (translated from the French), a veritable masterpiece in obituaries, written in the manner of true academic French with its pathos and moving lyricism, or the brilliant essay "A Conversation with Gerhart Hauptmann". Doubtless, in many cases the materials in the *Literary Heritage* volume and in the *Collected Works* will "meet" particularly in those areas of Lunacharsky's work connected with Russian and West European literature and art criticism.

In some of his constructions there are still issues open to discussion, as

for instance his preoccupation with the idea of "transposing the artistic plot from the language of one art into the language of another", or his conception of symbolism. But, even today, few would venture to qualify these sketchy general outlines of ideas, as a shortcoming: "synthesis of the theories of the arts" is a problem still awaiting solution by contemporary art criticism. Lunacharsky's appraisals of literary works of his time may often seem unexpected and paradoxical (take his views on A. Tolstoy, Mayakovsky, Pasternak). But they contain the distinguishing quality of the scientifically objective critic and scholar—principled forthrightness and objectivity based on profound aesthetic criteria. Moreover, his are observations on the "live reality" of literature; it will yet change the forms Lunacharsky recorded in the wake of events.

Two comprehensive studies based on archive materials complete the volume under review ("Lunacharsky and Moscow Case of 1899" by N. Trifonov and I. Shostak; "Lunacharsky in Exile in Vologda" by I. Kokhno). In them facts are defined more precisely and also the chronology of the early years of Lunacharsky's revolutionary activity.

The materials are subdivided into eleven thematic sections, devoted to different aspects of Lunacharsky's activity. The introductory articles to each of these sections are in the nature of research and may claim independent scientific interest. A most useful bibliographic list of Lunacharsky's works on problems of art and literature concludes the volume.

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Проблемы художественной формы социалистического реализма.
М., Изд-во «Наука», 1971. Т. I, 420 стр.; Т. II, 349 стр.

Problems of Artistic Form in Socialist Realism, Moscow, Nauka Publishers, 1971, Vol. I, 420 pp; Vol. II, 349 pp.

The authors of the two volumes under review have proceeded from the fact that "socialist realism" is an ideological and aesthetic category. The problems and composition of this original monography are dealt with in the corresponding manner. The main emphasis is on questions of form which, given the abundance and variety of material and the individual methods of the writers, is in itself interesting.

The first volume contains an explanation of the methodology and articles on the correlation between artistic form and reality. The main problem here is that artistic form does not correspond directly to empirical life: it interacts with it through the es-

sence of the work, through its content. The book sets as its object to overcome this difficulty. In the second volume the authors "delves" into the very heart of literature. Here the main subject is the principles governing the ties between the artistic whole and the elements and factors which go to shape it.

The authors proceed from the fact that "the truth of fact, the truth of the idea and artistic truth are always most closely linked. It is in art that their synthesis occurs which makes it possible to speak of work as artistic". All the articles emphasise the fact that artistic form corresponds, through artistic content, to reality, that it is not immanent, and that the principle underlying the artistic whole always, in the final analysis, stems from the material taken from life (of course, transformed by the will of the artist). Therefore, understanding of artistic form is crucial here. According to the authors, the function of form is to place the final stamp on a work and bring out artistic integrity at the high level which is designated

as as "artistic truth". In short, the function of form is to bring about the ultimate synthesis, the organisation of the whole precisely as a whole.

The book has been divided into sections enabling the reader gradually to understand the main functions of artistic form in works of socialist realism: "Aspects of Study", "Artistic Form in Socialist Realism and Reality", "The Inner Ties of a Work", "Problems of Narration". An article dealing with the national specifics of form generally is given in Vol. II. There is, of course, a certain vagueness and use of indefinite terminology in listing these sections. For instance, what is meant by "inner ties of a work"? Special terms do exist in the history of literature, sometimes forgotten, or, on the contrary, used too frequently. But this vagueness springs from the merits of the collection itself: from a desire to designate not mechanically and in the most adequate manner the complicated and integral dialectics of form. This way of presenting material reflects, we believe, the specific nature of art and its links with real life.

The thematic composition within the sections themselves is also internally motivated. It treats of the fundamental questions involved in the study of form in socialist realism literature, of the very understanding and pressing questions which arise in investigating form, and formative factors taken singularly and together. Thus, in the historical-typological plane, and particularly in the typological plane, certain styles in Soviet prose and poetry are examined. On the examples of individual factors of style, the main principles underlying the correlation between form and reality are shown. We see the literary process in all its various hypostases: in its general aspects and "close up", a process encompassing the complex problems of the different schools and trends of style, and the no less complex "mechanism" of the use of metaphors in Soviet prose, a whole historical section on poetry, the end-

lessly debatable "factors" of the "lyrical character" in a text about concrete things, the elements which make up style, events which happened a comparatively long time ago, the stormy course of literature with its indisputable or controversial situations. The accent then logically shifted to the inner meaning of a work, and in general of individual phenomena in art, which appear to be "drops" in the general literary movement. The integrity, organisation and inner atmosphere of a work form the main themes discussed. Then the distinctive features of the narrative in the socialist realism are considered.

The names of Gorky and Mayakovsky as the founders of socialist realism, the embodiment of its key achievements, run all through the book. In general the book shows the breadth, abundance, and many-sidedness of style trends in socialist realist literature mentioning such writers as Sholokhov, Brecht, Fedin, Tvardovsky, Esenin, Vsevolod Ivanov, Zabolotsky, Babel, Martynov, Prishvin, Platonov, and writers of the present generation.

It is quite clear that artistic form by itself is lifeless. Today any discussion of form is immediately a discussion of content, but with the accent on the manner in which the work is created, the way in which its content has been presented and the inner "mechanisms" of the way thoughts have been expressed. This, of course, means that the methodological premises must be precisely defined. These premises have been specially elucidated in certain works and, enumerated in all, or almost all, the articles. In this respect, this book is a success. In the given case one is not automatically aware of the sensation of the compositional unity of the edition, but this is one of its difficult goals.

In what way is this unity formed?

The authors look upon art as an ideological, cognitive, spiritual activity, profoundly specific in its aesthetic integrity with life and inseparable

from "life as such" and from man's surroundings and the reality within him. This respect for art, for its life force, and its spiritual potential sharply contrasts with the stand taken by schools which regard art in a somewhat simplified light, in an overspecialised or technical way. There are many such schools. Various social and ideological circumstances, as well as scientific progress and similar "factors of the century" are constantly engendering a lack of trust in spiritual activity throughout the world, vulgar or simply reactionary attacks on the essence and significance of artistic creations. The authors of the collection take a firm and unequivocal stand on this issue.

In general, almost all the articles contain interesting polemics with art critics and philosophers in the West, take issue with some Soviet philologists. These polemics in most cases are aimed at defence of social and spiritual activity, the essence of art, and its lofty tasks. In their polemics with the schools of structuralism, neopositivism or formalistic conceptions of creative work, with "pure" intuitivism, objectively idealistic and other platforms put forward by Western theorists, the authors never lose sight of the positive tasks they have to carry out.

One of the main links in the general chain of conceptions presented in the collection is the thought about *integrity* and the profound inner unity of every phenomenon in creating works of art. This line of thought is opposed to the vulgar ideas on art which ignore its artistic nature, its close, "capillary-like" ties with real life and with the spiritual substance of man as a whole. The collection has, in general, successfully coped with this as well.

The idea of integrity which is in itself beneficial should be understood soberly and *dialectically*, otherwise it may become the reverse. Any work of art consists not only of "harmony" (a very popular word with the au-

thors of this book), but also of dynamism, dialectics, contradictions, and contrasts. As they themselves wrote about it in their time, many of the authors of the collection are fully aware of the fact that any part of an image, the initial trope, detail and stylistic approach in art are also based on the unity of what cannot apparently be joined, on the "reverse ties" of the poles, of the elements making up the whole, on the image itself. *Integrity* itself exists as a result of the inner dynamism and dialectics. This integrity is neither a stone nor a monolith, but a living thing, an "organism", not just "body", stiff and cold. This should not be forgotten.

However, sometimes there is a certain lack of coordination in the collection with regard to questions of style, resulting evidently from an insufficiently profound understanding of the integrity and harmonious nature of the artistic image.

Were it not for these profound dialectics of integrity, our literature would never have given the world *And Quiet Flows the Don*, nor the poems of Mayakovsky, nor the verses of Tvardovsky. Unless he fully understands the properties of the image, the present-day theorist cannot completely understand, we believe, either the very nature of art or the ties between it and the reality of our revolutionary epoch.

One of the favourite ideas of the authors of the book is that creative work is a continuation of behaviour in life. In principle this idea is both true and fruitful. Actually, creative work is "behaviour" itself in its most inner essence. But it is also quite clear that such an idea should be treated sensibly, in a balanced way, and that it is dangerous to oversimplify it or make it too straightforward.

One of the most successful features of the two volumes is the pathos of variety in art, respect for the individual and for the writer's search for a new style. While emphatically opposing pure subjectivism

and modernist tendencies in art the authors are constantly concerned about the breadth of creative work and the range of art in socialist realism literature. Thoughts on the great variety and graphic nature of Soviet art have been particularly developed in the article by A. Myasnikov, and are present throughout the collection as a whole.

One of the strongest points in the book is application of theoretical premises and principles to the contemporary literary process. This par-

ticular feature is something new in our theory (it was formerly considered that the sphere of theory could only be applied to established literary works) and it should be welcomed.

Both volumes are on a high theoretical and scientific level and are a substantial contribution to the study of the ideological and aesthetic nature of Soviet literature.

V. Gusev,
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THE INSTITUTE OF ORIENTAL STUDIES, USSR ACADEMY OF SCIENCES: RESEARCH INTO THE HISTORY AND CULTURE OF THE SOVIET EAST

The Institute of Oriental Studies, USSR Academy of Sciences, is mainly concerned with the Eastern countries outside the Soviet Union. But the USSR is one of the largest countries in Europe and Asia, so there can be no clear understanding of the history of the peoples of the Asian continent as a whole without understanding the past and present of the Soviet Eastern republics. That is why considerable research has to be done by the Institute into the culture and history of the Soviet East, where it merges with the history of the Eastern countries outside the Soviet Union.

The Department of the Soviet East of the Institute was set up to conduct integrated research on the culture and history of the Central Asian, Kazakh and Transcaucasian peoples. Many other departments have of course worked on related problems and will continue to do so.

The Institute has organised the study and publication of a large series of sources, including sources on the history of the USSR. Of the publications on written monuments of the East, the series "Eastern Sources for the History of the South-East and Central European Peoples" is especially interesting for the study of the history of the peoples of the USSR. It has been published according to an international cooperation plan with the participation of Soviet and some European Orientalists. Unique material on the history of the Slavs and the Khazar Kingdom and descriptions of the Crimea, the Ukraine, Moldavia and the Northern Caucasus have

been prepared or already published in this series.

The *Book of Travels* by Evlia Çelebi, a 12th-century Turkish traveller, has come out in the "Written Monuments of the East" series (Vol. 1, *The Land of Moldavia and the Ukraine*). The book contains very interesting historico-geographical, ethnographic, social and economic data on the Ukraine and Moldavia. Another volume in the same series, the correspondence of Rashid ed-Din, an Iranian historian and political figure who lived at the end of the 13th and the beginning of the 14th century, contains valuable data on the history of the peoples of the Transcaucasia and Central Asia. The highly interesting and detailed diary of the first Japanese traveller in Russia (13th century) is to come out shortly in this series. It is entitled *Dreams about Russia*.

The Institute has undertaken research on the history of Central Asia and the publication of ancient written monuments from archives found by archaeologists in Staraya Nisa (Parfia), Toprak-Kaly (Khorezm), the castle on Mt. Moug (Sogd) and of separate inscriptions (the Sogd inscription on Afrasiab and others). Documents of this kind are very difficult to read or decipher. Nevertheless, I. Dyakonov, V. Livshits and O. Smirnova (the Leningrad Branch of the Institute of Oriental Studies) have achieved remarkable results. Some material has already been published; other findings are to be published in the coming years. Thus, local written documentary

sources on various periods of Central Asian history have been made available for the first time. This is a great contribution to our idea about the political, social, economic and cultural history of this region. Ancient Turkic sources should also be mentioned in this context.

A whole complex of sources (from linguistic to archaeological) is under study at the Institute. B. Litvinsky's group, workers from the Leningrad Hermitage and the Tajik Academy of Sciences are now working on the cultural and ethnic history of ancient and mediaeval Central Asia. B. Litvinsky and T. Zeimal have published a monograph, *Adjina-Tepa. Painting, Sculpture, Architecture*, with a comprehensive analysis of this remarkable monument of the 7th century. Expeditions from the Tajik Academy of Sciences, which excavated Adjina-Tepa, have recovered several masterpieces of art. The monograph gives a convincing and extensive picture of the ancient links of the peoples of Central Asia and Hindustan. Publication of collections "Historical and Cultural Heritage of Central Asia" is to begin in 1973.

Recently it has been decided to begin publication of a series "Central Asia in the Writings of Scholars and Travellers". The books and collections of documents (part of them prepared jointly with the Archives Department of the Uzbek Council of Ministers) include an account of Meyendorf's journey to the Bukhara Khanate in 1820 with the Russian embassy, G. Arendarenko's mission to this Khanate late in the 1870s, *Travels in the Altai, Mongolia, Tuva, Kazakhstan* by P. Chikhachev, and others.

Research on the modern times is highly varied. N. Khalfin, for instance, is working on a book devoted to the political, diplomatic and economic relations between Russia and the Central Asian Khanates in the 19th century.

Literary critics and textologists at the Institute are studying and publish-

ing important monuments of Eastern culture. At present, they are preparing a critical text of the five poems by the great poet Amir Khosrau Dehlevi. These are known as *Hamse* (the pentad) and have had a considerable impact on our knowledge of international literary and cultural links between India, Central Asia, Iran, the Transcaucasia and Turkey.

K. Shidfar's *Literary Ties Between Asia, India and the Middle East in the 16th-19th Centuries* is based on manuscripts and materials from the major Soviet libraries, and promises to be of considerable interest.

The history of the Soviet peoples, including the history of the peoples of Central Asia, is an integral and extremely important part of world history. It is therefore highly important to study the role and significance of the Soviet peoples' contribution to world history and culture, to show their ties with other peoples, as well as the mutual enrichment of cultures. The Marxist approach to this problem requires a comprehensive investigation of the economic and historico-cultural links and the mutual influences of peoples, and also data on their cultural synthesis promoted by their trade and economic ties and cooperation.

Contemporary life is imbued with the living spirit of Arabian, Iranian and Indian civilisations. The creative potential of these civilisations continues to develop and enrich itself as a result of social progress. The friendship of the Soviet people with the peoples of Iran, Afghanistan and Hindustan has deep historical roots. The Great October Socialist Revolution has ushered in a new era in the relations between the USSR and the peoples of the East.

Speaking of my own scientific interests, I shall mention *The Tajiks, Their Ancient and Mediaeval History*, put out by Nauka Publishers in late 1972. This book is an attempt to investigate and generalise from Marxist positions all the sources on the history of the Tajiks and some of their

Central Asian neighbours and to show the ancient sources of friendship between the peoples of our country. Many traditional views and interpretations are reviewed in this book. Unfortunately, the works of some specialists are based on a simplified and even light approach to the complex problems of social, economic and cultural development in Central Asia and the ethnogenesis of her peoples. Their links with neighbouring countries and peoples are not always studied thoroughly enough. The authors of such studies sometimes even fail to understand that the cardinal problems of history and culture should be approached from a class angle.

The pseudoscientific racist writings of some authors abroad are sharply criticised in my book. It shows the exceptionally important role the peoples of the Soviet East, who are an inseparable part of the family of Soviet peoples, have to play in the world historical and historico-cultural process.

Since I have made reference to unconscientious authors using science to serve their selfish ends, I should like to dwell on this question in greater detail.

In recent years numerous specialists on the Soviet East have appeared in the West and this is only natural: the revolutionary changes in the Eastern republics of the USSR and the gigantic progress from feudalism to socialism, by-passing the capitalist stage of development, have attracted the attention of the whole world, the developing countries in particular. This makes scientific analysis and spread of the experience of socialist construction in the Soviet East a matter of enormous practical, political and scientific importance. Progressive scientists in the West are honest in considering these important problems.

But there is a number of so called Sovietologists and "specialists on anticommunism" whose aims have nothing to do with science and whose real concern is to discredit the historic achievements of the Soviet peoples in the economic and cultural fields and in the sphere of political development.

A recent book by Teresa Rakowska-Harmstone, devoted to "nationalism in Tajikistan" is a typical example. The author uses Soviet and other sources to lend her work the character of scientific research. But this will not help her to dupe anybody. Rakowska-Harmstone's attempts to undermine and distort the principles of proletarian internationalism, the basis of the entire life of the Tajik people in the Soviet period, and to defame the Soviet nationalities policy in the Republics of Central Asia are hostile to the Tajik people. That is why our primary task is to wage an irreconcilable struggle against such unscientific views.

A large group of researchers at the Institute of Oriental Studies are working on important problems of the history of the peoples in the Eastern republics in the Soviet period. They study fundamental questions of the social, economic and cultural changes in the Soviet East and their impact on the developing countries. They also study the diplomatic ties of Soviet Turkestan with neighbouring countries, the characteristic features and achievements of socialist construction in Central Asia, the specificity of the cultural revolution there, and the further prospects of the Soviet Eastern peoples' culture, socialist in form and national in content.

Academician **B. Gafurov**
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SOVIET ETHNOGRAPHERS IN NEW GUINEA

The year 1971 was the 125th anniversary of the birth of Miklukho-Maklai, the great Russian traveller and scholar, and the 100th of his first expedition to the North East coast of New Guinea, where no European had ever set foot before. He is rightly regarded as the pioneer of the scientific study of the New Guinea aborigines. The vast amount of material he collected on the ethnology and anthropology of the Papuans is still of great value in our time.

So the sixth cruise of *Dmitri Mendeleev* was dedicated to this double anniversary. The *Dmitri Mendeleev* is a special purpose scientific research ship of the USSR Academy of Sciences. The cruise covered 24 thousand miles and lasted four months. The ship visited the islands and archipelagos of all the major regions of Oceania: New Guinea, the New Hebrides, New Caledonia and the Fiji islands in Melanesia, Western Samoa and the Ellice islands in Polynesia, the Nauru and Gilbert islands in Micronesia and Lord Howe, a small island off the East coast of Australia. She also put in at Singapore, Sidney and Tokyo.

Many different scientists took part in the expedition, among them eight ethnographers, whose main interest was Bongu—a New Guinea village where Miklukho-Maklai did his research.

We spent several days in Bongu, learned a great deal about the everyday life of Papuans and visited their vegetable gardens and plantations. In the evenings we dined with prominent villagers in our cabin and had the most fascinating conversations which went on well into the night.

Our specialists added new material to the description in Bonguan traditional culture by Miklukho-Maklai. The expedition identified clans (*vemun* in Bonguan) which are exogamous land-owning communities, who join their efforts in some of their work. The local kinship ter-

minology was recorded, and the fate of the Gorendu and the Gumbu villages, whose inhabitants came to live in Bongu was traced.

Bonguan songs and folk instrument music were recorded and a film made on the life of the village. Anthropometry, special photography and hair sampling of the local inhabitants were performed; hair samples will make it possible to determine blood groups and other genetic factors and also provide data on metabolism.

The extensive collections which Miklukho-Maklai brought back from New Guinea are preserved in the oldest museum in Russia (founded in 1724)—the Museum of Anthropology and Ethnography, USSR Academy of Sciences. The traditional garments and utensils, wood carvings, boar-tusk and sea-shell ornaments, musical instruments and other items which the expedition brought back from Bongu, will extend this collection substantially.

We recorded with great care the changes that have taken place in various aspects of Bongu life in the century that has elapsed. The inhabitants are, of course, no longer the Stone Age people, who greeted Miklukho-Maklai. They have an elementary school, a Protestant Church and three shops now. The inhabitants use metal axes and knives, buy the cloth for their rather scanty garments, and use kerosene lamps when they can afford to. There are even several transistor radios in the village. Their main source of income is copra. The money they get from the copra trade goes on poll-tax, church dues, school fees and then on such indispensable items as kerosene, cloth, rice, etc.

But the Bonguans have, however, retained many features of their own individual culture. The colonial capitalist administration and "Western" culture have had only superimposed a veneer upon the traditional way of life. They have modified it to

a point, but have not destroyed it completely.

The primitive system of burning out vegetation to obtain land and fishing is basic in their consumer economy. The women go out into the vegetable gardens in the morning and come home at night with heavy wicker baskets on their backs which are strapped to their foreheads much as they did a hundred years ago. Their main agricultural implement is still the wooden stake and their staple of diet still consists of roots and tuber crops (taro, yam and sweet potato), bananas, coconuts and fish. The houses are now built on piles, but beyond this their building method remain almost unchanged. The Bonguans use the same straw mats, wooden and coconut shell vessels and clay pots they used in Miklukho-Maklai's time and they still buy them in Bil-Bil village. The village fishermen go out to sea in their traditional catamarans but their fish-hooks are now metal and the heads on their bamboo harpoons are made of iron nails.

Christianity here is only superficial and is blended with ancient beliefs. There are many followers of Yalli—the Papuan founder of the "cargo-cult", with a distinctly anticolonial orientation. The village affairs were dealt with by the elders of the vemuns. A village council has been instituted now but it is composed of the same elders.

The ethnographers have collected a vast amount of scientific material for the book "The Bongu Village of Today". An account of our work in the village will explain how so much was achieved in such a short time.

Our stay in Bongu was full of surprises both for us and for the Bonguans. As soon as our boat hit shore, we spoke the Papuans in their own language, we said: "O tamo, kaie! Ga abatera simun!" which means "We great thee, men! We are brothers!". Even our little bit of Bonguan made a tremendous impression; the language is only spoken by the Bonguans (400

in number); the neighbouring villages speak different languages. When, on occasion, Australian officials visit Bongu, they use pidgin English to communicate with the local population.

They were still more surprised and delighted when they found out that we came from the "land of Maklai", the memory of "tamo rus"—the remarkable Russian scholar is still alive. He has become a character in local legend and the Russian names for an ax, maize, water melon, bull, have been adopted into the Bongu language. The Bonguans welcomed us, their guests from the "land of Maklai", they were most cooperative and answered all our questions willingly.

There was a surprise in store for us too. Koni Khomate, the school teacher, told us that festivities to celebrate the 125th anniversary of Maklai's birthday were soon due and that guests were expected from neighbouring villages. Our ship had to leave before the day of the festivities but our Bonguan friends found a way out.

Two days later the Papuans gathered on the village square to put on parts of the festival performance for us. We watched a mime of Miklukho-Maklai's first appearance in Bongu. Our captain played "tamo rus" by request of the Bonguans. Then came ancient dances; scenes from life; a journey in a boat, the story of a wicked man who drowned because he was wicked, a Kangaroo hunt.... We might have been back in the last century. Miklukho-Maklai used to be guest of honour at such dances, and the dancers we saw were painted and dressed as if they had stepped straight out of his pictures.

Our work in Sydney also had to do with the anniversary. He first came to Sydney in 1878 and spent four years there. The Russian scientist married Margaret Robertson, the daughter of a former premier of New South Wales. After his death, in 1888, his widow returned with her

children to Australia. Three of his grandsons still live in Sydney. Paul—announcer of the ABC, Kenneth—a lawyer and Robertson who is a chemist.

We visited places connected with Miklukho-Maklai and were shown a great deal of material on his life which has been preserved at Sydney University, the Mitchell Library and at Robertson Maklai's home. We have brought back microfilms of some of these items. We also discovered some museum exhibits, manu-

scripts and photos which were not known in the USSR (for instance, some Papuan skulls Miklukho-Maklai brought from New Guinea). The University, the library and the grandsons of the scientist have promised to send the Institute of Ethnography microfilms and photocopies which will add to the collected edition of Miklukho-Maklai's works which is contemplated in the nearest future.

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D. Sc. (Hist.).

ARCHAEOLOGICAL INVESTIGATIONS IN MESOPOTAMIA

Besides the work conducted in the Soviet Union the Institute of Archaeology, USSR Academy of Sciences, has, since the end of the forties, been engaged in archaeological investigation in countries offering the greatest interest for research into the general laws of the historical process. Since that period Soviet archaeologists have successfully explored monuments of antiquity in a number of countries of Middle Asia, North Africa and the East Mediterranean. In 1969 an expedition of the Institute of Archaeology began extensive research in north-west Iraq, on the territory of ancient Mesopotamia.

The valley between the Tigris and the Euphrates was one of civilisation's first centres of productive economy—agriculture and cattle-rearing. Here, still at the dawn of the metal age, began the stratification of society into classes, giving rise to the first state formations. The most ancient written memorials and towns have been discovered here. For over a 100 years now expeditions from various countries, mainly from Britain, France, the USA and Germany, have conducted large-scale investigations in Iraq, and many of the discoveries made here have become world famous (the excavations of Ur, Uruk, Eridu, Babylon, Nippur, Nimrud, Nineveh and others).

In recent decades research has

been centered mainly on memorials several millennia older than the Sumer, Babylonian and Assyrian civilisations. These memorials reflect one of the most significant phenomena of ancient history—the Neolithic revolution, i. e., the transition from primitive forms of husbandry to the main forms of productive economy—agriculture and cattle-rearing.

In view of this, the main purpose of the Soviet expedition in Iraq was research in the shaping and development of the productive forms of economy in the Near East. The works of N. Vavilov¹—a leading Soviet biologist—prove that North Mesopotamia is one of the most ancient centres of the origin of agriculture and cattle-rearing, the heart of the south-west Asian centre, which he singled out as the seat of the domestication of wild animals and the cultivation of wild-growing cereals. Later, his conclusion was confirmed archaeologically: research in North

¹ N. I. Vavilov, "Centers of the Origin of Cultural Plants", *Works on Applied Botany and Selection*, Vol. XVI, 2nd edition, Leningrad 1926; N. I. Vavilov, *The Origin of Agriculture in the Light of Contemporary Research*, Moscow-Leningrad, 1932; N. I. Vavilov, "The Theory of the Origin of Cultural Plants after Darwin", *Sovetskaya nauka*, 1940, No. 2 (all in Russian).

Mesopotamia and especially in the foot hills of Kurdistan and the adjacent valleys yielded direct evidence of the early agricultural economy in its formative and mature stages, and its main phases²

But these investigations have till now been confined to North-East Iraq and the adjacent regions of Iran, i. e., the mountain regions of Zagros and Kurdistan, though in this respect, the north-west regions of Iraq are no less promising. Take the wide and fertile Sinjar valley. It was especially favourable for farming from the very first stages of the process. The north and the north-east of the valley touched upon the territory of the wild-growing ancestors of the main cereal crops. In the very first stages of wheat and barley cultivation the tillers descended into the Sinjar valley attracted by its soft and fertile soils, the rainfall, sufficient for winter crops and the favourable conditions for primitive irrigation systems necessary in summer. The region also offered extensive opportunities for cultural ties; from hoary antiquity it was one of the busiest routes connecting the main part of Mesopotamia with Syria and the entire East Mediterranean area. Hence, the unusual concentration of archaeological memorials of different periods.

The Sinjar valley has been much less explored, than the other regions of Mesopotamia. Archaeologists began work here at the end of the thirties and did not go beyond investigations on single memorials of comparatively recent history. Prominent among these are the excavations of the Assyrian site Tell-el-Rimah by a British expedition led by D. Oates. The Soviet expedition was the first to excavate the early agricultural settlements.

² R. J. Braidwood, B. Howe, "Prehistoric Investigations in Iraqi Kurdistan". *Studies in Ancient Oriental Civilization*, No. 31, Chicago, 1960. B. M. Masson. *Middle Asia and Ancient Orient*, Moscow-Leningrad, 1964 (in Russian).

It began wide-scale work in 1969 on Yarym-Tepe, a group of settlements in the vicinity of Tell-Afar. (Yarym-Tepe means "Half of a Hill"; indeed, half of the hill had been washed away by a stream that changed its course). Six settlements located within 1 km successively represent three major archaeological cultures of pre-script Mesopotamia: the Hassuna, the Halaf and the Ubaid.

The most ancient of these settlements is the one on Yarym-Tepe I. It is a comparatively small hill not more than 100 m. in diameter and 4.5 m about field level. But excavations revealed that the deposit lies more than 1.5 meters below the field level and extends far beyond the hill. The area of the settlement seems to have been not less than 2 hectares, while the thickness of the deposit reaches 6 m. The whole mass of the latter belongs to the Hassuna culture and is the result of successive reconstructions and the activity of the many generations of people who lived here. The investigation area of the settlement is 1500 m². In 1972 the excavations on some plots had worked through the whole mass of the deposit, i. e., to the depth of 6.5 m. Eight successive living levels have been identified, each reflecting a considerable length of time. The mergings of the levels are due to the visible replanning of considerable sections of the settlement.

Remnants of dwellings and other purpose structures have been found in all the living levels. Most of them were complex constructions with many rooms. The number of buildings discovered so far exceeds 300. In the three upper levels preservation is poor and only parts of houses have been cleared, for the deposit here has suffered severely from numerous graves and pits of later times. The preservation of structures is much better in the fourth living level and quite satisfactory in the fifth. In these levels some large buildings have been fully revealed and in a

large area of the settlement elements of its layout have been determined.

Clay was the main building material for all the levels. The basic wall elements were clay-slab brick architecture, sometimes arranged uniformly and similar in size. The outer walls of the houses are thick, usually 45-50 cm and often buttressed, a technique encountered in Tell Hassuna³ and believed by the members of the excavations to have also served as roof-beam support. The latter were overlaid with rods, branches and reed mats, then coated with a considerable layer of clay.

The main type of structures were large rectangular houses consisting of living and auxiliary household quarters (up to ten and more). The living chambers measure 4×3 m, the other rooms are much smaller—2×1.5; 1.5×1 m, etc. The interior of the living room already showed the standard features characteristic of the early agricultural settlements: a vaulted oven for baking bread (usually of the tanur type with top orifice), large grain-vessels, often gypsum, querns and mortars. Apertures in the walls, thresholds and stones with door-sockets indicate that some of the rooms had doors between them. These were mostly in the outer walls. The household chambers on the other hand had no doors in many instances, and served largely for the storage of grain and other food products.

Of special note is the round-shaped structure revealed in the fourth living level. It is more than 10 m in diameter and its outer wall is nearly 50 cm thick. Traces of partitions, separating sections have been found inside. This structure, which possibly had a special purpose, testifies that Hassuna buildings were much more diverse

and complex than was supposed until the present. In this respect the monumental kilns, most probably ceramic ones (with an inner diameter of up to 2 m), are indicative. The custom of locating such kilns in one spot allows one to assume the existence of a special production section in the settlement.

The main structures of the fifth living level were regularly disposed, stood well apart and were separated by wide passages and free areas, levelled and coated with layers of gypsum, repeatedly renewed. Together with other data these "pavements" testify to the comparatively high organisation of the settlements of the Hassuna culture.

The sixth layer yielded large and complex structures with systems of living and auxiliary quarters. Noteworthy here are the special annexes, sometimes of a round form with oval or circular socket-seats in a solid clay mass for setting clay or gypsum food-vessels.

The buildings of the two following levels have not as yet been studied sufficiently. However, mention should be made of a series of complexes discovered. Thus, remnants of an 11×6 m eight-room house have been exposed. The rooms measure 1×1.2 m, 2.25×1 m, 2.25×2 m, etc., the central one being 3.5×3 m. A large kiln with a fuel section and roasting chamber was located next to this house. It is the most ancient two-tier kiln to be excavated in Mesopotamia.

It is interesting to note that excavations often revealed children's graves under the floors of houses. The rite of interring infants in dwellings was widespread among early agricultural tribes in the Near East and in South-East Europe.

The Yarym-Tepe I findings are many and varied. They are largely earthenware. All the main forms of Hassuna vessels are represented in Yarym-Tepe I. The greater part of them belong to the group identified in Hassuna as "standard earthenware

³ Tell Hassuna is a settlement South of Mosul, after which the whole culture was named. Seton Lloyd and Fuad Safar. "Tell Hassuna. Excavations by the Iraq Government Directorate General of Antiquities in 1943 and 1944", *Journal of Near East Studies*, Vol. IV, No. 4, October, 1945.

and typical for the middle and the late deposits of the memorial.⁴

The main forms of the group are jars, pots and bowls. The ornaments are incised, painted and combin both techniques. The themes of the incised ornament are: the herring-bone, inscribed angles and triangles with slant hatching. The painted ornaments are contrasting groups of slant lines, ribbons, slant hatching, inscribed angles, triangles, circles filled with red paint, etc. The colours used are pink, red, wine-colour, deep brown. Fragments of imported vessels are present right up to the sixth level. They are characteristic of the Samarra culture, widespread in Central Mesopotamia in the middle of the 6th millennium B. C. and are distinguished by the specific style of painted ornament and colour combination (chocolate brown ornament on white background, involved geometric compositions, images of scorpions, etc.).

Besides vessels earthenware is represented by statuettes of human figures. Thirty have already been found, the largest known collection in the plastic art of Hassuna culture. All the figures are female and of a distinctly single type: upright, with elongated hairstyle (or head dress), long, slanting eyes, symmetric lateral protuberances: arms, modelled breast, narrow waist and accentuated hips. Incised ribbons and sometimes painted ornament were used to adorn the figures.

The tools found were flint and more often obsidian blades, used as knives, scrapers, and sickles. Grain grinders, mortars, pounders and polished hammers were made of volcanic rock. Other tools like awles, needles and polishers were of bone. Clay was the material for whorles and sling-balls. Such minor items as beads, seals, etc., were made of the same materials.

The copper threading with three copper ore bits, found in the VII level of Yarym-Tepe I are of funda-

mental significance. They are the most ancient testimonials of the development of metallurgy in Mesopotamia.

Basically, the population subsisted on a productive economy that was already sufficiently developed. The implements and grains of cereal found on the site of the settlement speak of a developed agriculture. The data on cattle-rearing are like-wise revealing. Bones of wild animals (the gazelle, the wild bull, the boar, etc.) have been found, besides bones of undoubtedly domesticated goats, sheep, pigs, and, most important of all, the cow.

It should be noted that till now there has been no authentic evidence of the domestication of the cow that far back in antiquity.

The excavations of the Yarym-Tepe II settlement yielded no less interesting results. Only the western half of the hill has remained here. The deposit is 8 m. thick and is full of materials of the Halaf culture.⁵ A 400 m² area has been laid bare at a depth of 5 m. Unfortunately the upper layers of this settlement have been severely damaged by graves and pits of a later period. At least two upper levels have been almost completely destroyed.

Although also the third level was badly damaged it contained many remnants of not only floors but of separate dwellings with adjoining out-houses. They were excavated at an average depth of 1.10-1.20 m to 1.50 m. Four more levels have been bared at a depth of 1.70 to 5 m. Data was thus obtained for investigating the techniques and forms of house building by the inhabitants of this settlement and by the tribes of the Halaf culture. Also a large quantity of various archaeological material was obtained.

⁵ This culture acquired its name from the settlement Tell Halaf in North Syria, investigated in early thirties of this century by a German expedition. See Max Oppenheim, *Tell Halaf*, Berlin, 1943.

⁴ Seton Lloyd and Fuad Safar, *Op. cit.*, p. 272.

The settlement of Yarym-Tepe II had no special planning and, like in other known Halaf villages (Tell Arpachiyah in Mosul⁶) its buildings stood close to each other. Most of the dwellings revealed here are single-room round clay structures, 3-4 meters in diameter, and shaped like a tholos. The tholos found at a depth of 1.2-2.05 m preserved best. Its diameter was 4.5 meters and its walls, preserved to a height of at least 0.80 m had an average thickness of 25 cm. In some places they had special supports. The structure had two door apertures 0.60 to 0.85 m. wide, one in the north-western part and one in the south-eastern part. A special thick clay and gypsum were used to coat the floor, and in the northern part of the house a rectangular niche (55×40×20 cm) was made.

Remnants of a most interesting round structure, unfortunately only partly preserved, have also been discovered on the adjacent plot, in fact, it abutted the tholos from the southern side, but was built somewhat later. A clay partition divides the building into two unequal parts. The smaller one is, in turn, divided into two sections, undoubtedly intended for household purposes, evidently for storing products. Besides crushed clay vessels and a large pounder and a quern also charred grains of cereals have been found here in considerable quantities. The auxiliary structures, round and rectangular and usually adjoining the living quarters were smaller than the latter, having an average diameter of 1.5 m.

Remnants of some thirty round structures have already been discovered in Yarym-Tepe II (the excavations of Halaf culture settlements in Iraq had yielded only 13 before we began our work) and all existing doubts about their purpose as dwellings have now been dispersed.

Moreover, it seems that the round clay structures are characteristic of the architecture of dwellings in North Mesopotamia in the 5th millennium B. C. This architecture is of a form distinctly differing from that characteristic of Yarym-Tepe I or, in other words, of this area in the preceding epoch.

Archaeological data, including those obtained in Yarym-Tepe II, indicate that historical and cultural progress in North Mesopotamia of the Halaf period is distinguished not only by changes in house building and a further development of agriculture and cattle-rearing but by the appearance of new elements in material culture. Without going into the circumstances that caused such marked changes in the progress of North Mesopotamia of that period we should like to draw attention to the following interesting fact.

The most recent archaeological investigations in Transcaucasia have established that at about the same period round clay structures in the form of a tholos were the main type of dwelling architecture in the valley between the Kura and the Araks⁷. Could these facts be connected? Here it should be borne in mind that imported pieces of painted pottery characteristic of the Halaf culture began to appear here at approximately that time.

Thus, the work of the Soviet expedition in Mesopotamia affords new possibilities of posing and solving problems bearing on the insufficiently explored cultural and historical ties of the Ancient East and the Caucasus in the period of the beginning and development of agriculture.

One of the significant results in the work on this memorial is the discovery of the remnants of a large public building, evidently a place for worship. Excavations here have not been

⁶ M. E. L. Mallowan and Y. C. Rose, "Excavations at Tell Arpachiyah, 1933", Iraq, Vol. II, London, 1935.

⁷ K. Kh. Kushnariova, T. N. Chubishvili, *Ancient Cultures of the South Caucasus*, (5th-3rd millennium B. C.), Leningrad, 1970 (in Russian).

completed, but a massive clay wall 7 m long and buttressed has already been revealed. It is abutted by rooms of different sizes. The absence of household pottery, implements, and bones of animals in building and around it is conspicuous.

Such buildings—sanctuaries—are known to have appeared in the period of early agricultural development.⁸ But until now they have not been discovered in memorials of the 5th millennium B.C. The only other sanctuary of Halaf culture that has been found to date is that of the Tell-Aswad settlement in North Syria, investigated in 1938 by a British expedition.⁹

The Yarym-Tepe II excavations yielded a great deal of archaeological material. The stone and obsidian implements found reflect the entire agricultural process from harvesting to processing of the farm produce. Also considerable quantities of charred grain have been discovered. Pits and large clay vessels for grain storage have been found as well as clay basins for kneading dough and numerous clay tanur-like surface ovens for baking bread.

The osteological material collected proves beyond doubt that in the herds which belonged to the Yarym-Tepe II village all the main domestic animals were represented: the cow, the sheep, the goat, and the pig.

Besides stone axes, querns, pounders, various vessels, ornaments like pendants, bone awles, pins and other artifacts, a considerable collection of Halaf pottery has been discovered. The latter is of particular interest because it represents the best and, artistically, the most vivid pottery known from early agricultural memorials of the Old and the New World.¹⁰

⁸ James Mellaart, *Earliest Civilizations in the Near East*, London, 1965, pp. 119-132.

⁹ N. E. L. Mallowan, "Excavations in the Balich Valley". *Iraq*, London, 1946, pp. 123-126.

¹⁰ Takey Dabbagh, "Halaf Pottery". *Summer*, Vol. XXII, Baghdad, 1966, pp. 23-43.

Particularly noteworthy in the collection from the point of view of craftsmanship is the large group of painted vessels ranging from miniature bowls and pans, with different and often multicolour internal and external patterns, to large beakers and pots. Shapes of vessels and themes of painted patterns, hitherto not represented in Halaf earthenware were discovered in Yarym-Tepe II. Up to 400 patterns painted mainly in red and brown have already been established. Geometric motives prevail. But vessels with other motives have been found here, among them a fragment of a large vessel with most realistic image of a cheetah in a heraldic position, dark brown against a light background. Such an image has not till now been seen on Halaf earthenware. A flock of waterfowl is pictured in black on a bowl shred. Another vessel fragment depicts a unique scene executed with considerable skill—deer attacked by birds of prey. The goats, deer and fish painted on some vessels are most realistic. A large quantity of pottery has been found on which are painted bull heads, and a number of large vessels painted over entirely with images.

Apart from the regular work on Yarym-Tepe I and II, the expedition explored memorials of the Stone Age. Its most important discovery was the small hill Tell-Sotto to the west of Yarym-Tepe, the site of the most ancient agricultural settlement in the Sinjar Valley. Two main deposits can be traced here. The upper deposit chronologically corresponds to the early Yarym-Tepe I level and evidently dates back to the beginning of the 6th millennium B. C. The lower deposit characterises an unknown early agriculture of North Mesopotamia, which we propose to refer to as the Tell-Sotto culture. Extensive investigation of this culture is contemplated parallel with work on the Yarym-Tepe settlement.

R. Munchayev,
D. Sc. (Hist.)

SOVIET SCIENTISTS CELEBRATE THE JUBILEE OF THE USSR

Together with all the peoples of the USSR Soviet scientists celebrated in 1972 the 50th anniversary of the formation of the Union of Soviet Socialist Republics. Jubilee sessions of the general meetings of the Academy of Sciences of the USSR, and of the Academies of Sciences of the Union Republics, and All-Union and Republican scientific conferences were held at which scientists heard and discussed reports and papers devoted to various aspects of the socio-economic, political and cultural life of the world's first multinational socialist state.

The jubilee session of the general meeting of the USSR Academy of Sciences was held in Moscow. In the Presidium were Academician B. Ponomaryov, Alternate Member of the Political Bureau of the CC CPSU and Secretary of the CC CPSU; Academician V. Kirillin, Deputy Chairman of the USSR Council of Ministers, Chairman of the State Committee of the USSR Council of Ministers for Science and Technology; Academician M. Keldysh, President of the USSR Academy of Sciences; S. Trapeznikov, Head of the CC CPSU Department of Science and Educational Institutions; the presidents of the republican Academies of Sciences and of the Academies of Sciences of Bulgaria, Hungary, the GDR, the Democratic Republic of Vietnam, Cuba, Mongolia, Rumania, Poland, Yugoslavia, Czechoslovakia, as well as foreign members of the USSR Academy of Sciences.

Academician M. Keldysh delivered a report on the subject "The Multinational Union of Soviet Republics and

Science". The theme of Academician B. Ponomaryov's report was "The Formation of the USSR and Its Historical Significance".

The jubilee session demonstrated the unity of the country's scientists around the Communist Party, their determination to raise still higher the banner of Soviet science, to enhance its role in communist construction.

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Moscow was also the venue of an All-Union Conference "50 Years of the USSR: Triumph of the Leninist Nationalities Policy", held by the USSR Academy of Sciences, the Institute of Marxism-Leninism, the Academy of Social Sciences and Higher Party School of the CC CPSU, jointly with the Academies of Sciences of the Union Republics. Academician P. Fedoseyev, Vice-President of the USSR Academy of Sciences, Director of the Institute of Marxism-Leninism, opened the Conference.

During the three days it met scientists from Moscow and from the scientific centres of Union Republics, heard over a hundred reports and communications at the Conference's plenary and section meetings.

Academician E. Zhukov, Director of the Institute of World History of the USSR Academy of Sciences, delivered a report on the subject "The Formation of the USSR and Its International Significance". V. Chkhikvadze, Corresponding Member of the USSR Academy of Sciences, took as his theme "The Soviet Multinational State". "The Socialist Culture of the Soviet People, a New Historical

Community of People" was the subject of a report by M. Iovchuk, Corresponding Member of the USSR Academy of Sciences, Rector of the Academy of Social Sciences under the CC CPSU. E. Chekharin, D. Sc. (Philos.), Rector of the Higher Party School of the CC CPSU reported on "Democracy of the Soviet Multinational State".

The leading role of the working class in the development of the socio-economic life of the Soviet Republics, the new inter-national relations, the flowering of the economy and science, the realisation of Leninist principles in the cultural construction of the Soviet Republics, the multiform manifestations of the friendship of Soviet peoples—the inexhaustible source of the creative endeavours of the working people of all nationalities of the USSR—these subjects were given coverage in reports by the leading personnel of the Academies of Sciences of the Union Republics.

* * *

"50th Anniversary of the Formation of the USSR: Triumph of the Leninist Nationalities Policy of the CPSU" was the central item on the agenda of the inter-republican theoretical conference held in Alma-Ata, attended by scholars of the USSR Academy of Sciences and the Academies of Sciences of the republics of Central Asia and Kazakhstan, of the branches of the Institute of Marxism-Leninism under the CC CPSU and of other scientific centres and institutions. The Conference was opened by D. Kunayev, member of the Politbureau of the CC CPSU, First Secretary of the CC of the Communist Party of Kazakhstan.

He was followed by Academician P. Fedoseyev, Vice-President of the USSR Academy of Sciences, who made a report on "The Social and Ideological Principles of the Friendship of Peoples of the USSR". The Conference also heard reports on the

great contribution made by V. I. Lenin to the elaboration of the Marxist doctrine on the nationality question, the socialist culture and social thinking of the Soviet people as a new historical community. In their reports the heads of scientific institutions of Uzbekistan, Kazakhstan, Kirghizia, Tajikistan and Turkmenistan told of the successes achieved by the fraternal republics in the development of science and technological progress as a result of the realisation of the Party's Leninist nationalities policy, the unification of forces and resources in a single multinational socialist state.

* * *

A regional scientific session devoted to the 50th anniversary of the USSR was held by the Academies of Sciences of the USSR and of three Union Republics, the Ukraine, Byelorussia and Moldavia in Kishinev. The opening address was made by I. Bodul, First Secretary of the CC of the Communist Party of Moldavia. The Session heard reports by Academician P. Pospelov, "The Formation of the USSR is the Embodiment of the Ideas of Proletarian Internationalism", by M. Kim, Corresponding Member of the USSR Academy of Sciences, "The Soviet People—A New Historical Community" and reports by scholars of the Ukraine, Byelorussia and Moldavia who told of the headway made by science and the economy of their respective republics.

* * *

The jubilee session of the USSR Academy of Sciences' Division of History discussed the major results, problems and tasks of Soviet historical science. Reports were delivered by Academician P. Pospelov, Academic Secretary of the Division of History, "50 Years of the Soviet Multinational State and Historical Science", by M. Kim, Corresponding Member of the USSR Academy of

Sciences, "The Soviet People—A New Historical Community", by Y. Polyakov, "Population of the Soviet Republics on the Eve of the Formation of the USSR", and by the heads of scientific institutions of the Union Republics and of many cities, who spoke of the results to date of historical science and the tasks ahead.

* * *

"A New Historical Community, the Soviet People, and the Literature of Socialist Realism" was the subject on the agenda of the All-Union scientific conference held in Moscow by the Union of Writers of the USSR, the Gorky Institute of World Literature and the Academy of Social Sciences of the CC CPSU. The Conference, which was opened by Academician K. Fedin, Chairman of the Board of the Union of Writers, heard and discussed the reports "The Leninist Nationalities Policy and the Development of the Literature of the Peoples of the USSR", "Current Problems of Socialist Realism", "The Ideal of the Fraternity of Peoples and of the Spiritual Community of Socialist Nations in Contemporary Soviet Literature" and several other reports.

* * *

The subject of the jubilee symposium held in Moscow by the Philosophy Society of the USSR, the Academy of Social Sciences under the CC CPSU, the Moscow State Institute of Culture and the Institute of Philosophy of the USSR Academy of Sciences was "The 50th Anniversary of the Formation of the USSR is a Triumph of the Leninist Programme of the Development of Socialist Culture". Reports on research in the sphere of the spiritual life of Soviet society, on the flowering of culture, national in form and socialist in content, were made by Academician F. Konstantinov, President of the Philosophy Society of the USSR, M. Iovchuk, Corresponding Member of

the USSR Academy of Sciences, A. Arnoldov, D. Sc. (Philos.), F. Korovin, Cand. Sc. (Hist.), and by other scholars.

* * *

A scientific conference, "The Role of the Working Class in the Development of the International Traditions of the Peoples of the USSR and in the Development of the Economic Relations of the Union Republics", was held by the Academy of Social Sciences (Moscow) in which its faculty members, as well as scholars of a number of scientific institutions of the capital participated. The participants heard the following reports: "The Leninist Party, the Organizer of the USSR", "The Leading Role of the Working Class in the Formation of the USSR", "The Cooperation of the Working Class of the Soviet Republics in the Restoration and Development of Industry in 1923-1928", "The Assistance Rendered by Soviet Russia in Liquidating the Economic Backwardness of the Peoples of Central Asia and the Trans-Caucasus."

* * *

The Soviet experience in establishing the world's first multinational state was the keynote theme of the scientific conference held in Baku by the Commission of Historians of the USSR and the GDR. The plenary meeting heard reports by: G. Aliyev, First Secretary of the CC of the Communist Party of Azerbaijan, "The Formation of the USSR—the Continuation of the Great October Revolution"; Academician L. Stern (GDR), "The Historic and International Significance of the Formation of the USSR"; Academician I. Mints (USSR), "V. I. Lenin, the Founder of the Soviet Multinational State"; Academician H. Bartel (GDR), "The Role of Soviet Historical Science in the Development of Marxist-Leninist Historical Science in the GDR"; P. Zhilin, Corresponding Member of the

USSR Academy of Sciences, "The Cooperation of the Peoples of the USSR in the Great Patriotic War"; Academician A. Sumbat-zade of the Academy of Sciences of the Azerbaijan SSR, "The Ideas of the Friendship of Peoples in the Works of Azerbaijan Scholars"; V. Sapanov, Cand. Sc. (Hist.), "The Traditions of the Fraternal Cooperation of the USSR and the GDR".

* * *

"The National and International in Modern Culture" was the central subject of the All-Union scientific conference held in Moscow by the Department of Social Sciences' Scientific Council on the History of World Culture of the Presidium of the USSR Academy of Sciences. The opening address was delivered by

Academician B. Piotrovsky. The plenary meeting heard reports by Corresponding Members of the USSR Academy of Sciences, M. Kim, "The Mutual Influence and Mutual Enrichment of the Cultures of the Peoples of the USSR", and M. Iovchuk, "The National and International Aspects in the Culture of Socialism", and by Y. Bromley, "The Present Ethnocultural Process in the USSR". More than 50 reports and communications were made at section meetings by scholars of Moscow, Leningrad, the capitals of the Union Republics and of many other cities of the country. Among the participants were scholars from abroad: I. Kiralyi (Hungary), M. Rodriguez Solveira (Cuba), A. Tănase (Rumania), J. Gráfina and J. Jermár (Czechoslovakia).

THE INTERNATIONAL FORUM OF ARCHIVISTS

In August 1972 the 7th International Congress on Archives took place in Moscow. It was attended by 1,500 archivists and scholars from 54 countries. Such forums of archivists and historians are convened every four years by the International Council of Archives (ICA) under UNESCO.

In his report, "The Relations Between Government Archives and Administrative Archives", the Director General of the Main Archives Administration under the Council of Ministers of the USSR, F. Dolgikh, noted that the question under consideration depended on the natural continuity of the three stages through which the document passed—clerical work, the archives of the establishment and the state archives. The future of state archives and of the science of history depends on a concrete solution of this question. Taking the Soviet Union and the other socialist countries as an example, he pointed out the advantages of the way in which archives are organised in socialist countries compared to capitalist countries where documents

of private establishments and public organisations, are, to all practical purposes, lost to the state archives. At the same time the speaker noted that the archivists of most countries are faced by the same urgent problems.

F. Biljan (Yugoslavia) read the paper, "Findings Aids at the Archives at the Service of Science". Having investigated the experience gained in forty archives within the framework of the ICA, he stressed the importance of quickly and fully making available to science and social practice the wealth of existing documents. For this purpose, such means of supplying scientific information as various guides to archives, catalogues and descriptive material can be used. Archives are looking for the best possible ways of installing automatic means to find the necessary documents. Participants in the discussion noted that the question of improving the means of obtaining information in archives is necessitated by the increase in scientific research based on documents, and the need to save the scholar's time when working from

documents. Many mentioned the need to strengthen and expand scientific ties between historians and archivists. The Soviet participants, Academicians I. Mints and A. Narochnitsky and S. Shmidt, D.Sc. (History), spoke about this, in particular, and stressed the great role played by the Soviet archives in developing the science of history.

Acceptable solutions to the problems facing archives at the present stage cannot be found without the introduction and use of the latest technology in practical work. The complex nature of this task presents a separate problem, which was also discussed at the Congress. The main report was given by J. B. Roads (USA) who noted the ever growing importance of using technical means in the various fields of archive keeping. The speaker stressed that the necessity to work out up-to-date methods of handling documents, besides the traditional ones, calls for a systems analysis of the work of archives which takes into account the "life cycle" and "circulation" of the document from the moment it comes into existence. The successful development of archive keeping in the future and the extent of its public importance will depend to a great degree on how fully and rationally modern technical means will be used in archives. The majority of those who participated in the discussion spoke about this. Considerable attention was devoted to questions of applying modern technical means for establishing a system for finding retrospective information. Those who took the floor also spoke about the need to create a lasting basis on which to preserve modern documents.

Reports devoted to the subject of technical aid to archives in the developing countries were given by S. N. Prasad (India) and J. Ede (Great Britain). In his report, S. N. Prasad drew attention to the fact that documents relating to colonial rule should be handed over to archives in the developing countries and stressed

that the assistance rendered to these archives should in no way violate the sovereignty of the developing countries. J. Ede spoke of the various forms of such assistance and of the formation of special funds. As regards the handing over to archives in the developing countries, of documents relating to the period of colonial rule, J. Ede did not object to this just demand, but at the same time, he defended the right of the former parent states to these documents. These papers gave rise to lively discussion. Almost all the representatives of the developing countries who spoke, supported S. N. Prasad's idea that documents relating to the colonial period should be handed over to the former colonies, and criticised some of the views expressed in the report by J. Ede. In particular, the opinion was voiced that assistance rendered by the former colonial powers was only payment of an insignificant part of the debt for the long years of exploitation of the former colonies and that J. Ede's paper testified to the insufficient assistance rendered to archives in the developing countries by the former parent states. The representatives of the socialist countries supported the just demands of the delegates from the developing countries. The Congress made a recommendation on the given question.

The Congress discussed also other questions of importance for archive keeping, the study of sources and the future development of the science of history. Questions connected with the collection, storage and the use of certain specific kinds of documents were raised at the section sessions which discussed in particular the subjects, "The Archives of Literature and Art", "Architectural Records" and "Films and Photographs Archives".

Recommendations were made on all the questions discussed directed at further improvement of archive keeping in the light of the new demands arising from the expansion of relations between states and the rapid development of modern science and

technology. A new executive committee of the ICA was elected at the Congress, with F. Dolgikh (USSR) as President of the ICA.

The next, 8th International

Congress on Archives will be held in Washington in 1976.

L. Krivoshein,
Editor-in-Chief,

Soviet Archives Magazine

THE HEGEL HERITAGE AND THE CONTEMPORARY WORLD

Three main groups of problems were discussed at the 9th International Hegelian Congress in Antwerp in August-September 1972 in which 150 scientists from many countries participated.

The first group of problems treated of the significance of Hegel's ideas in the development of present-day science, in particular, in the progress of mathematics and systems analysis. The second group included discussions on authority and anti-authority, Hegel's attitude towards anarchist theories. The third group of problems centred on the problem of education and the ways and means for developing pedagogics. This diversity of problems considered by the Congress laid a certain imprint on its proceedings because of limited time, the discussion on each of the above-mentioned problems was of necessity brief. At the same time, however, the breadth of Hegel's ideas on a number of major trends of scientific cognition provided the participants in the discussion with the opportunity of clearly revealing the multilateral significance of Hegel's philosophy in the present-day battle of ideas and in the political struggle waged by scientific communism and its opponents. Incidentally, almost all the scholars present at the Congress noted the direct continuity of the dialectical theories of Hegel and Marx.

The first group of problems was discussed at a plenary session and in the panel on the philosophical interpretation of systems theories and systems approach to science today. In his paper "The Natural Number and Dialectics", G. Günther (USA) showed that in the historical conception of the number problem in Hegel's philosophy it is necessary to

analyse the dialectical nature of quantitative cognition which manifests itself, in particular, in the fact that in the history of the number, just as in the present-day theory of numbers, the effect of the laws of the transition from quantity to quality and of negation of the negation is graphically revealed. Here it is in place to note that G. Günther, a mathematician and cybernetics specialist remote from Marxism, proceeded in his paper from dialectical principles which, on the whole, do not contradict the dialectical-materialist conception of quantitative methods.

L. Suvorov (USSR) in his paper "Continuity and Discretion in Hegel's Philosophy" stressed the dialectical nature of Hegel's interpretation of continuity and discontinuity in the objective world and its cognition by man. He critically assessed Hegel's approach to mathematical methods showing, in particular, that many of Hegel's ideas in this sphere retain their relevancy and importance for present-day science.

The paper submitted by Y. Zeleny (Czechoslovakia) gave a detailed analysis of the philosophical essence of mathematical structures from the viewpoint of dialectical materialism.

Among the papers dealing specifically with an analysis of the correlation between dialectics and systems theories, special mention should be made of those submitted by G. Kröber (GDR) — "Science — Systems — Dialectics" and by E. Hahn (GDR) — "Historical Materialism and Systems Analysis". Citing a number of facts G. Kröber showed how the systems analysis was used in the works of Marx and outlined some important spheres where the systems

methodology of Hegel and Marx could creatively be applied in research today. Analysing the specific features of philosophical researches in the sphere of historical materialism, E. Hahn called attention to the fact that historical materialism, taken by itself, represents (and includes as a necessary aspect) specific forms of the systems analysis, and on this plane should be specially studied as the direct realisation of the systems approach, which had already been carried out in the past century.

The paper submitted by T. Oizerman (USSR)—“The Relation Between Philosophy and Individual Sciences in Hegel's Systems”—was received with interest. Problems related to this paper were discussed in reports by M. Bynvarov and D. Pavlov (both from Bulgaria) and by A. Gedö (Hungary) as well as in a number of other reports.

Somewhat in dissonance with the above-mentioned reports was the paper submitted by Ch. Axelos (FRG) on “The System of Scepticism as a Manifestation of Dialectics”. In it he advanced the idea that, on the one hand, dialectics includes a sceptical attitude towards all convictions, i. e., considers that there is no absolute truth; on the other hand, it should permit all and any opinions, should be tolerant of all points of view and recognise their equality. This position received no support at the Congress and was countered in many papers and speeches by a Marxist solution of this question.

In the panel which discussed the problem of authority and anti-authority in Hegel's philosophy the

paper by A. Abusch (GDR), “Authority of Reason” attracted particular attention. It showed the great importance of the traditions of the Enlightenment in the struggle against the negative authority of scholastics, religion and the church, and for real authority—the authority of reason and science, of historical experience and revolutionary struggle, of the communist movement and of all social-progressive movements of our time. A. Abusch stressed that this authority, taking into account its entire progressive nature, also includes a certain dialectical movement, internal contradictions and dialectical transitions. The discussion of the problem of authority and anti-authority showed that both the ideas of Hegel as well as the entire subsequent development of the dialectical theory are most relevant in the present struggle against the philosophy of irrationalism and its voluntary and involuntary defenders from among revisionists, the so called New Left, the Trotskyites, Anarchists, etc.

The third group of papers was discussed at the panel which dealt with problems of education and pedagogics. Of interest were the papers submitted by the Soviet philosophers M. Iovchuk—“On the Role of Historical and Philosophical Sciences in the Educational System (as interpreted by Hegel and Marx)”, S. Oduyev—“The Role of Philosophy in Education”, and by E. Baller—“Education and Culture as a Philosophical Problem”, to mention a few.

L. Suvorov,
D. Sc. (Philos.)

THE INTERNATIONAL CONGRESS ON AESTHETICS

The 7th International Congress on Aesthetics took place from August 28 to September 2, 1972, in Bucharest (Rumania) under the slogan “Aesthetics, Art and the Conditions of Human Existence”. The fact that representatives from thirty countries took part in the Congress illustrates

the growing interest in aesthetics throughout the world. Discussions were held by 513 scholars-aestheticians, art experts, literary critics and sociologists at three plenary and 21 sectional sittings.

At the plenary sessions reports devoted to topical problems aroused

lively interest: M. Ovsyannikov (USSR)—"The Philosophical and Methodological Basis of Modern Aesthetics"; S. Krzemien-Ojak (Poland)—"Art and Its Prospects for the Future" and A. Sanchez (Mexico)—"Socialisation or the Death of Art".

Lively discussions developed at the sessions in the section entitled "Modern Art. The Death of Art?" which dealt with the future development, or "life" and "death", of art. During these discussions a change could be noted in the opinions of bourgeois scholars on the state and future prospects for modernism, a trend which became the focal point to be considered in this section. At the previous international congresses on aesthetics (Holland, 1964 and Sweden, 1968) the overwhelming majority of aestheticians from abroad considered modernism to be a trend in art with a future, but at this last congress a great many of them were more or less unanimously agreed that modernism is facing a crisis in the capitalist countries and they not so much discussed its "flowering" as its chances of "survival".

At the Congress the decline in bourgeois art was frequently attributed to phenomena "common to all mankind", in particular modern technological progress. Some scholars looked upon the decline in modernist art as a kind of "growth sickness" (Z. Barbu, England); others explained the crisis in art as a consequence of "a surplus of information" and found that "over-information" was the reason for the "insuperable loneliness" which was having a pernicious effect on art and literature (J. Monnier, Switzerland); even the machine which makes work easier for people was seen as a hindrance and a rival to the artist, who allegedly feels incapable of competing with it (Blumenkranz, France).

Discussing art in relation to science, and in particular in relation to the scientific and technological revolution, the Bulgarian philosopher,

Athanas Stoikov, emphasised that both these forms of social consciousness serve to assist in cognising and transforming the world, society and the human personality. When speaking of the various aspects of the ties and interrelations between science and art, he traced the mutually beneficial effects they have had on one another and paid special attention to analysing the conditions in which art and science have developed in the socialist countries.

In his report, the Soviet aesthetician K. Dolgov dealt with the development of art as a dialectic process inseparably linked with the social and historical practise of mankind and stemming from the profound assimilation of what has been achieved.

Stanka Simeonova from Bulgaria discussed the question of artistic truth and its ties with social and aesthetic ideals. Discussing art from the point of view of Lenin's theory of reflection and citing concrete examples, she showed that artistic truth in works of art does not consist in threading them with detail, but in revealing the essence of actual phenomena.

In her report "The Revival of Art", Anneliese Grosse (GDR) pointed out the organic ties between art and concrete social ideals. She referred to the new features and actively transforming nature of socialist art which is in itself a new phase in the development of art.

Those participating in the Congress took note of the more active ties being formed between aesthetics and man's environment. However, the opinions of the scholars varied on concrete facts and ways of extending the sphere of aesthetics. In the speeches of certain theorists from the West, the tendency was felt which enveloped in the conception of art objects and phenomena that are in no way connected with artistic creation. In particular, the French aesthetician M. Dufrenne, spoke of widely felt enthusiasm for what is

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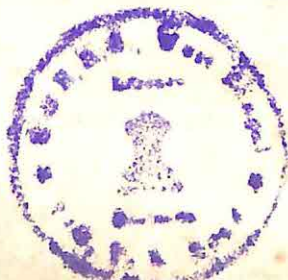
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